

**CES Environmental
Services, Inc.**

4904 Griggs Road
Houston, TX 77021
Phone: (713) 676-1460
Fax: (713) 676-1676

Invoice

Date	Invoice #
12/19/2007	40970

Bill To: AMTEX Machine Products, Inc.
Attn: Mr. Carlos Montanez
4517 Brittmoore Rd
Houston TX 77041

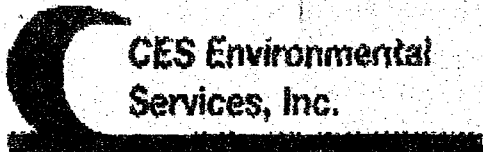
		P.O. No.	Terms	Project	
			Net 10		
Quantity	Description	Manifest #	Rate	Amount	
4,624	12/14/07 Transportation services by CES @ \$0.07 per gallon		0.07	323.68	
	24% Fuel Surcharge		77.69	77.69	
4,624	Disposal of Non RCRA regulated rinsewater @ \$0.115 per gallon	2164938JJK	0.115	531.76	
	4% City of Houston Franchise Fee		16.06	16.06	
	CES job #54821				
We appreciate your business!			Subtotal	\$949.19	
Late Payment Policy: Any unpaid balances begining on the 30th day after the account is due will accrue a per annum interest rate of 6%, unless otherwise stated in a formalized contract.			Sales Tax (8.25%)	\$0.00	
			Total	\$949.19	



9586100

EPAHO010003297

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXL5905 / CES006	2. Page 1 of	3. Emergency Response Phone (713) 896-4408	4. Manifest Tracking Number 002164938 JJK			
5. Generator's Name and Mailing Address 4517 Brittonville Road Houston, TX 77041		Generator's Site Address (if different than mailing address) 4517 Brittonville Road Houston, TX 77041						
Generator's Phone: (713) 896-4408		U.S. EPA ID Number TXL59050461						
6. Transporter 1 Company Name U.S. Environmental Services, Inc.		U.S. EPA ID Number						
7. Transporter 2 Company Name		U.S. EPA ID Number						
8. Designated Facility Name and Site Address 26433 Wilbur Rd Waxahatche, TX 77065		U.S. EPA ID Number N/A						
Facility's Phone: (409) 794-3119								
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) Non-HCA/Non DOT regulated rinse water	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes		
		No.	Type					
		1	TT	5000	G	5501042		
		2						
		3						
4								
14. Special Handling Instructions and Additional Information FBI/DOJ - 20072 Machine Products, Inc. - 40761 Machine Products, Inc. - Houston, Texas 15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offeror's Printed/Typed Name Frank L. Smith		Signature [Signature]		Month Day Year 12/14/01				
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Signature Month Day Year Transporter 2 Printed/Typed Name Signature Month Day Year								
18. Discrepancy 18a. Discrepancy Indication Space Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: 18b. Alternate Facility (or Generator) U.S. EPA ID Number Facility's Phone: 18c. Signature of Alternate Facility (or Generator) Month Day Year								
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. 1172 2. 3. 4.								
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Signature Month Day Year								



**CES Environmental
Services, Inc.**

4904 Griggs Road
Houston, TX 77021
Tel. (713) 876-1460
Fax. (713) 876-1678

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc.-Houston) Nonhaz
Wastewater

Date : 12/14/2007

Manifest # : _____

AMTEX Machine Products, Inc.

Client : _____

Ticket : 54821

Phone : 7138964488

Consignee : Newpark Environmental Services,
LLC

CES Environmental Services, Inc.

Transporter : _____

Signature X Fred Leach

Signature [Signature]

Leave CES Yard : 6:15

Arrive At Destination 10:15

Arrive At Customer : 7:05

Begin Unloading : _____

Begin Loading : 7:25

Finish Unloading : _____

Finish Loading : 7:40

Leave Destination : 11:10

Leave Customer : 7:50

Arrive At CES Yard : _____

Customer PO # : _____

Total Hours : _____

CES Unload: ☐

Gross Weight : _____

Ending Odometer : _____

Tare Weight : _____

Beginning Odometer : 1690820

Net Weight : _____

Total Miles : _____

Driver : Semien, Peter

Tractor # : 283

Tote # : _____

Signature : [Signature]

Trailer # : 206

Box # : _____

Job Comments/Equipment : 9/10/15/2015

White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHQ010003299



**CES Environmental
Services, Inc.**

4904 Griggs Road
Houston, TX 77021
Phone: (713) 676-1460
Fax: (713) 676-1676

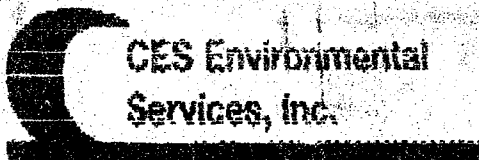
Invoice

Date	Invoice #
12/21/2007	41031

Bill To: AMTEX Machine Products, Inc.
Attn: Mr. Carlos Montanez
4517 Brittmoore Rd
Houston TX 77041

		P.O. No.	Terms	Project	
			Net 10		
Quantity	Description	Manifest #	Rate	Amount	
5,218	12/18/07 Transportation services by CES @ \$0.07 per gallon		0.07	365.26	
	24% Fuel Surcharge		87.67	87.67	
5,218	Disposal of Non RCRA regulated rinse water @ \$0.115 per gallon	4011527JJK	0.115	600.07	
	4% City of Houston Franchise Fee		18.12	18.12	
	CES job #55100				
We appreciate your business!			Subtotal	\$1,071.12	
Late Payment Policy: Any unpaid balances beginning on the 30th day after the account is due will accrue a per annum interest rate of 6%, unless otherwise stated in a formalized contract.			Sales Tax (8.25%)	\$0.00	
			Total	\$1,071.12	

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of	3. Emergency Response Phone (713) 896-4499	4. Manifest Tracking Number 004011527 JJK		
5. Generator's Name and Mailing Address AMTEX Machine Products, Inc. 4617 Britton Road Houston, TX 77041 Generator's Phone: (713) 896-4499			Generator's Site Address (if different than mailing address) AMTEX Machine Products, Inc. 4617 Britton Road Houston, TX 77041 Generator's Phone: (713) 896-4499				
6. Transporter 1 Company Name CES Environmental Services, Inc.			U.S. EPA ID Number TX0000000000				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address Kochon Environmental Services, LLC 2640 Wilshire Rd Marina, TX 77655 Facility's Phone: (409) 754-3419			U.S. EPA ID Number N/A				
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	1. 100-KCRAACH DOT regulated free water		1		5,500		CESQ3942
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Fugate ID AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc. Houston) Houston CES Job # 00401 (14) 110704057224 (15) (16) 521894							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.2(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offeror's Printed/Typed Name Vince Roca			Signature Vince Roca		Month 11	Day 11	Year 94
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name Alfred Garza			Signature Alfred Garza		Month 12	Day 18	Year 07
Transporter 2 Printed/Typed Name			Signature		Month	Day	Year
18. Discrepancy							
18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 52186405 Manifest Reference Number:							
18b. Alternate Facility (or Generator)			U.S. EPA ID Number				
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)					Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1. H3U		2.		3.		4.	
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name Vicki Halpauer			Signature Vicki Halpauer		Month 12	Day 18	Year 07



**CES Environmental
Services, Inc.**

4204 Griggs Road
Houston, TX 77021
Tel. (713) 676-1460
Fax (713) 676-1676

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc. -Houston) Nonhaz Wastewater

Date : 12/18/2007

Manifest # : 004011527 JOK

AMTEX Machine Products, Inc.

Client :

Ticket :

55100

Phone : 7138964488

Consignee :

Newpark Environmental Services, LLC

CES Environmental Services, Inc.

Transporter :

Signature

Victor Kucera

Signature

Uche Jhy

3.35

Leave CES Yard :

12.35

Arrive At Destination

Arrive At Customer :

12.45

Begin Unloading :

Begin Loading :

1.25

Finish Unloading :

Finish Loading :

1.35

Leave Destination :

Leave Customer :

Arrive At CES Yard :

Customer PO #:

Total Hours:

CES Unload: ☐

Gross Weight :

Ending Odometer :

Tare Weight :

Beginning Odometer :

Net Weight :

Total Miles :

Driver : Garza, Alfredo

Tractor # : 277

Tote # :

Signature :

Trailer # : 233

Box # :

Job Comments/Equipment :

White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHO010003302

NEWPARK ENVIRONMENTAL SERVICES LLC.

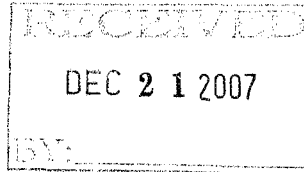
INVOICE

Invoice Date
December 17, 2007

Invoice Number
7822

Profile Number
1105081043BH

81015 CES ENVIRONMENTAL SERVICES INC
Accounts Payable
4904 GRIGGS ROAD
HOUSTON TX 77021



Contract
AFE

Date	Manifest #	Receipt #	Invoice Description	Line Total	Purchase Order
12/3/2007	002164622JJK	125430	SLUDGES 4765.00 GAL @ 0.090 / GAL	428.85	478.85
12/6/2007	002164716JJK	125478	SLUDGES 5458.00 GAL @ 0.090 / GAL	491.22	491.22
12/11/2007	002164837JJK	125604	LIQUIDS 4868.00 GAL @ 0.060 / GAL	292.08	292.08
12/14/2007	002164938JJK	125732	LIQUIDS 4624.00 GAL @ 0.060 / GAL	277.44	277.44
Invoice Total				<u>\$1,489.59</u>	

AMTEX

POSTED

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

125732

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

GATE DATE: 12/14/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE: TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164938JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL	4624.00	0.060	GAL	277.44	19	0	2
PO NUMBER:		TRANSPORTER: CES							
COMMENTS:									

TOTAL: 277.44**THANK YOU**

EPAHQ010003304

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of 1	3. Emergency Response Phone (713) 896-4488	4. Manifest Tracking Number 002164938 JUK	
5. Generator's Name and Mailing Address AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041			Generator's Site Address (if different than mailing address) AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041			
Generator's Phone: (713) 896-4488			U.S. EPA ID Number TXD008950461			
6. Transporter 1 Company Name CES Environmental Services, Inc.			U.S. EPA ID Number			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address Newbank Environmental Services, LLC 26400 Wilber Rd Winnie TX, 77665			U.S. EPA ID Number N/A			
Facility's Phone: (409) 794-3119						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.
	Non-RCRA/Non DOT regulated rinse water		1 11		5000	G
13. Waste Code CESQ1D42						
14. Special Handling Instructions and Additional Information Folder ID: AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc.-Houston) Nonhaz CES Job # - 54821 Wastewater 11a) 11070405728H 11b) 6/30/00 11c) 8/30/08 11d) 4/20/09						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offor's Printed/Typed Name X Fred Leach			Signature X Fred Leach		Month 12	Day 19
					Year 07	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name PETER SEMIEN JR.			Signature Peter Semien Jr.		Month 12	Day 19
					Year 07	
Transporter 2 Printed/Typed Name			Signature		Month	Day
					Year	
18. Discrepancy						
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number:						
18b. Alternate Facility (or Generator) U.S. EPA ID Number						
Facility's Phone:						
18c. Signature of Alternate Facility (or Generator) Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H134		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Vicki Hoffbauer			Signature Vicki Hoffbauer		Month 12	Day 19
					Year 07	

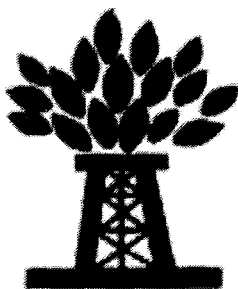
EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)

EPAHQ010003305

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by
corresponding to Newpark Environmental Services LLC Profile Number

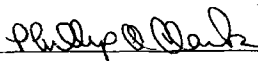
1105081043BH

and Manifest Number

002164938JJK

was processed and disposed by method of injection on

December 15, 2007



Newpark Environmental Services LLC Representative

gammato

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

E 125732

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER:

DEC 17 2007

GATE DATE: 12/14/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL TONS	%OIL	% SOLIDS
002164938JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL TRANSPORTER: CES	4624.00	0.060	GAL	277.44 19	0	2

PO NUMBER:

COMMENTS:

TOTAL: 277.44

*Amtek
w/w*

POSTED
12/14/07

THANK YOU

Dec. 17 2006 03:22PM P1

FAX NO. : 4097941355

FROM : NEWPARK BIG HILL

EPAHQ010003307

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of 1	3. Emergency Response Phone (713) 896-4488	4. Manifest Tracking Number 002164938 JJK	
5. Generator's Name and Mailing Address AMTEX Machine Products, Inc. 4517 Britton Road Houston, TX 77041			Generator's Site Address (if different than mailing address) AMTEX Machine Products, Inc. 4517 Britton Road Houston, TX 77041			
Generator's Phone: (713) 896-4488			Generator's Phone: (713) 896-4488			
6. Transporter 1 Company Name CES Environmental Services, Inc.			U.S. EPA ID Number TXD008950461			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address Newborn Environmental Services, LLC 26400 Wilbur Rd Winters, TX 77365			U.S. EPA ID Number N/A			
Facility's Phone: (409) 794-3119						
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
		No.	Type			
	Non-RCRA/Non DOT regulated rinse water	1	TI	5000	G	CESQ1042
2.						
3.						
4.						
14. Special Handling Instructions and Additional Information Pallet ID: AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc. - Houston) Nonhaz Wastewater 113) 110704057201 6/29/00 5/3/08 4/24/01						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offeror's Printed/Typed Name Frederick Leach			Signature <i>[Signature]</i>		Month Day Year 12/14/07	
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____						
17. Transporter Acknowledgment of Receipt of Materials						
Transporter 1 Printed/Typed Name Victor Senier 358			Signature <i>[Signature]</i>		Month Day Year 12/14/07	
Transporter 2 Printed/Typed Name			Signature		Month Day Year	
18. Discrepancy						
18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection						
Manifest Reference Number: _____						
18b. Alternate Facility (or Generator) _____ U.S. EPA ID Number _____						
Facility's Phone: _____						
18c. Signature of Alternate Facility (or Generator) _____ Month Day Year						
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
1. H134		2.		3.		4.
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Vicki Hoffbauer			Signature <i>[Signature]</i>		Month Day Year 12/14/07	

METTLER TOLEDO

Click By

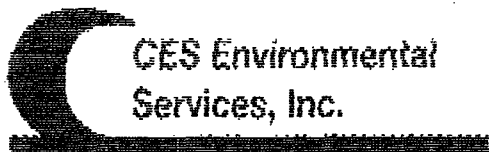
AUTHORIZED SIGNATURE

Newpark Env. Services LC CN 43550
26400 WILBER RD
WINNE TX 77665

ID	6	GROSS	79500 lb (1)
VEHICLE	1414	TARE	40940 lb
TIME	11 13 AM	NET	38560 lb
DATE	12 14 07		

10/15

11/10



**CES Environmental
Services, Inc.**

4904 Griggs Road
Houston, TX 77021
Tel. (713) 878-1480
Fax. (713) 878-1878

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc.(AMTEX Machine Products, Inc.-Houston) Nonhaz
Wastewater

Date : 12/14/2007 Manifest # : _____

AMTEX Machine Products, Inc.

Client : _____ Ticket : 54821

Phone : 7138964488 Consignee : Newpark Environmental Services,
LLC

CES Environmental Services, Inc.

Transporter : _____

Signature *& Fred Leach*

Signature *[Signature]*

Leave CES Yard : 6:15

Arrive At Destination 10:15

Arrive At Customer : 7:05

Begin Unloading : _____

Begin Loading : 7:25

Finish Unloading : _____

Finish Loading : 7:40

Leave Destination : 10:10

Leave Customer : 7:50

Arrive At CES Yard : _____

Customer PO #:

Total Hours:

CES Unload: ☐

Gross Weight : _____

Ending Odometer : _____

Tare Weight : _____

Beginning Odometer : 1690820

Net Weight : _____

Total Miles : _____

Driver : Semien, Peter

Tractor # : 283

Tote # : _____

Signature : *Peter Semien*

Trailer # : 206

Box # : _____

Job Comments/Equipment : _____

White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHO010003310

NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE

Invoice Date
December 17, 2007

Invoice Number
7822

Profile Number
1105081043BH

81015 CES ENVIRONMENTAL SERVICES INC
Accounts Payable
4904 GRIGGS ROAD
HOUSTON TX 77021

RECEIVED
DEC 21 2007

Contract
AFE

Date	Manifest #	Receipt #	Invoice Description	Line Total	Purchase Order
12/3/2007	002164622JJK	125430	SLUDGES 4765.00 GAL @ 0.090 / GAL	428.85	478.85
12/6/2007	002164716JJK	125478	SLUDGES 5458.00 GAL @ 0.090 / GAL	491.22	441.22
12/11/2007	002164837JJK	125604	LIQUIDS 4868.00 GAL @ 0.060 / GAL	292.08	292.08
12/14/2007	002164938JJK	125732	LIQUIDS 4624.00 GAL @ 0.060 / GAL	277.44	277.44
Invoice Total				<u><u>\$1,489.59</u></u>	

AmTEX

POSTED

Net Terms -- 30 Days

REMIT TO: NEWPARK ENVIRONMENTAL SERVICES, LLC. * P.O. BOX 62600, DEPT. 1089 * NEW ORLEANS, LA 70162-2600 * (888) 984-4445

EPAH0010003311

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

125604

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

GATE DATE: 12/11/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE: TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164837JK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL	4868.00	0.060	GAL	292.08	20	0	0
PO NUMBER:		TRANSPORTER: CES							

COMMENTS:
UNSCHEDULED

TOTAL: 292.08**THANK YOU**

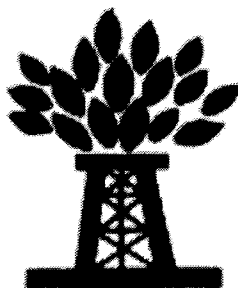
Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of 1	3. Emergency Response Phone (713) 896-4488	4. Manifest Tracking Number 002164837 JJK		
5. Generator's Name and Mailing Address AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041 Generator's Phone: (713) 896-4488		Generator's Site Address (if different than mailing address) AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041 (713) 896-4488					
6. Transporter 1 Company Name CES Environmental Services, Inc.		U.S. EPA ID Number TXD008950461					
7. Transporter 2 Company Name		U.S. EPA ID Number					
8. Designated Facility Name and Site Address Newborn Environmental Services, LLC 26400 Wilber Rd Winnie TX, 77665 Facility's Phone: (409) 794-3119		U.S. EPA ID Number N/A					
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers No. Type		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes
	Non-RCRA/Non DOT regulated rinse water		1 TT		5000	G	CESQ1042
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information Order ID: AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc.-Houston) Nonhaz CES Job # - 54646 Wastewater							
11a) 1107040572BH 11b) 889098 11c) 11d) 4868gal							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.							
Generator's/Offor's Printed/Typed Name Victor Rivera		Signature Victor Rivera		Month Day Year 12/1/07			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Transporter signature (for exports only): _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name JETER SEMIEN JR. Signature JETER SEMIEN JR. Month Day Year 12/1/07 Transporter 2 Printed/Typed Name Signature Month Day Year							
18. Discrepancy 18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: _____ U.S. EPA ID Number							
18b. Alternate Facility (or Generator) Facility's Phone: _____ Month Day Year							
18c. Signature of Alternate Facility (or Generator) Month Day Year							
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. H34 2. 3. 4.							
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Vicki Hoffmeyer Signature Vicki Hoffmeyer Month Day Year 12/1/07 DESIGNATED FACILITY TO DESTINATION STATE (IF REQUIRED)							

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by
corresponding to Newpark Environmental Services LLC Profile Number

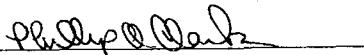
1105081043BH

and Manifest Number

002164837JJK

was processed and disposed by method of injection on

December 12, 2007


Newpark Environmental Services LLC Representative

Dec. 12 2006 02:27PM P1

FAX NO. : 4097941355

FROM : NEWPARK BIG HILL

Estimate

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

E 125604

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

GATE DATE: 12/11/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164837IJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 0 - 2 SOLIDS AND <5% OIL	4868.00	0.060	GAL	292.08	20	0	0

PO NUMBER:

TRANSPORTER: CES

COMMENTS:
UNSCHEDULED

TOTAL: 292.08

*AmTex
w/w*

POSTED
12/13/07

THANK YOU

EPAHQ010003315

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG / CESQG	2. Page 1 of	3. Emergency Response Phone (713) 896-4498	4. Manifest Tracking Number 002164837 JJK
5. Generator's Name and Mailing Address AMTEX Chemical Products, Inc. 4517 Brimstone Road Houston, TX 77061			Generator's Site Address (if different than mailing address) 4517 Brimstone Road Houston, TX 77061		
Generator's Phone: (713) 896-4498					
6. Transporter 1 Company Name CLC Environmental Services, Inc.			U.S. EPA ID Number TX000850461		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address 28400 Wilbur Rd Winn, TX 77665			U.S. EPA ID Number N/A		
Facility's Phone: (409) 754-3117					
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity
			No.	Type	
					12. Unit Wt./Vol.
13. Waste Codes					
14. Special Handling Instructions and Additional Information Wastewater					
4868 gal					
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.					
Generator's/Offor's Printed/Typed Name			Signature		Month Day Year
					12/1/07
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:				
	Transporter signature (for exports only):				
TRANSPORTER	17. Transporter Acknowledgment of Receipt of Materials				
	Transporter 1 Printed/Typed Name		Signature		Month Day Year
					12/1/07
	Transporter 2 Printed/Typed Name		Signature		Month Day Year
DESIGNATED FACILITY	18. Discrepancy				
	18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection				
	4868 Gals				
	Manifest Reference Number:				
	U.S. EPA ID Number				
	18b. Alternate Facility (or Generator)				
	Facility's Phone:				
	18c. Signature of Alternate Facility (or Generator)				
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)				
	1. H300	2.	3.	4.	
	20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a				
	Printed/Typed Name		Signature		Month Day Year
	Vicki Holtrauer				12/1/07

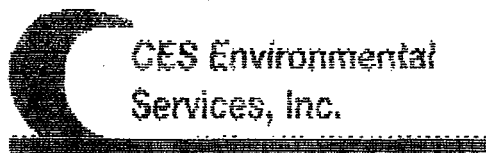
METTLER TOLEDO

Ullrich H

AUTHORIZED SIGNATURE

Newpark Env. Services LC CN 43465
26400 WILBER RD
WINNE TX 77665

ID	4	GROSS	74800 lb (1)
VEHICLE	1123	TARE	34880 lb
TIME	2:57 PM	NET	39920 lb
DATE	12 11 07		



**CES Environmental
Services, Inc.**

4904 Griggs Road
Houston, TX 77021
Tel. (713) 876-1460
Fax. (713) 876-1678

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc.(AMTEX Machine Products, Inc.-Houston) Nonhaz
Wastewater

Date : 12/11/2007 Manifest # :
Client : AMTEX Machine Products, Inc. Ticket : 54646
Phone : 7138964488 Consignee : Newpark Environmental Services,
CES Environmental Services, Inc. LLC
Transporter :

Signature Victor Rivera

Signature _____

Leave CES Yard : 10:15	Arrive At Destination : 2:00
Arrive At Customer : 11:00	Begin Unloading : _____
Begin Loading : _____	Finish Unloading : _____
Finish Loading : 11:45	Leave Destination : 3:00
Leave Customer : _____	Arrive At CES Yard : 4:40

Customer PO # : _____	Total Hours : _____	CES Unload: <input type="checkbox"/>
-----------------------	---------------------	--------------------------------------

Gross Weight : _____	Ending Odometer : 1686772
Tare Weight : _____	Beginning Odometer : 1684741
Net Weight : _____	Total Miles : _____

Driver : Semien, Peter Tractor # : 283 Tote # :
Signature : Peter Semien Jr. Trailer # : 228 Box # :

Job Comments/Equipment : _____

White (CES Office)

Yellow (CES Office / Billing)

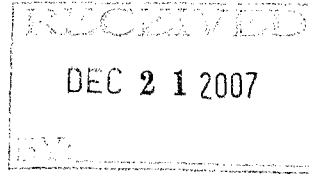
Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHO010003318

NEWPARK ENVIRONMENTAL SERVICES LLC.

INVOICE



Invoice Date
December 17, 2007

Invoice Number
7822

Profile Number
1105081043BH

81015 CES ENVIRONMENTAL SERVICES INC
Accounts Payable
4904 GRIGGS ROAD
HOUSTON TX 77021

Contract
AFE

Date	Manifest #	Receipt #	Invoice Description	Line Total	Purchase Order
12/3/2007	002164622JJK	125430	SLUDGES 4765.00 GAL @ 0.090 / GAL	428.85	428.85
12/6/2007	002164716JJK	125478	SLUDGES 5458.00 GAL @ 0.090 / GAL	491.22	491.22
12/11/2007	002164837JJK	125604	LIQUIDS 4868.00 GAL @ 0.060 / GAL	292.08	292.08
12/14/2007	002164938JJK	125732	LIQUIDS 4624.00 GAL @ 0.060 / GAL	277.44	277.44
Invoice Total				\$1,489.59	

AmTEX

POSTED

Net Terms -- 30 Days

REMIT TO: NEWPARK ENVIRONMENTAL SERVICES, LLC. * P.O. BOX 62600, DEPT. 1089 * NEW ORLEANS, LA 70162-2600 * (888) 984-4445

EPAHQ0010003319

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

125478

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

GATE DATE: 12/06/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164716JJJ	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL	5458.00	0.090	GAL	491.22	23	0	3

PO NUMBER:
TRANSPORTER: CES

COMMENTS:

TOTAL: 491.22

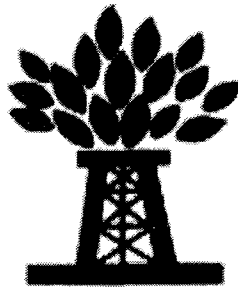
THANK YOU

EPAHQ0010003320

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TACESQG		2. Page 1 of 1	3. Emergency Response Phone (713) 896-4488		4. Manifest Tracking Number 002164716 JJK		
5. Generator Name and Address 4517 Brittmoore Road Houston, TX 77041 (713) 896-4488					6. Manifest Tracking Number (if different from mailing address) 4517 Brittmoore Road Houston, TX 77041 (713) 896-4488				
Generator's Phone: CES Environmental Services, Inc.					U.S. EPA ID Number TXC008950461				
7. Transporter 2 Company Name					U.S. EPA ID Number				
8. Designated Facility Name and Address 26400 Wilber Rd Winnie TX, 77665 (409) 794-3119					U.S. EPA ID Number N/A				
Facility's Phone:									
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any)) Non-RCRA, Non-DOT regulated rinse water			10. Containers No. Type 1 TT		11. Total Quantity 5000	12. Unit Wt./Vol. G	13. Waste Codes CESQ1042
	2.								
	3.								
	4.								
14. Solid or liquid hazardous waste or other material (AMTEX Machine Products, Inc.-Houston) Nonhaz Wastewater CES Job # - 54198									
11a) 1) CESQG 11b) 6) 30900 11c) 8) 35098 11d) 5458 gal									
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.									
Generator's/Offoror's Printed/Typed Name J J Lucio Signature J J Lucio Month 11 Day 20 Year 07									
INTL	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: Date leaving U.S.:								
	17. Transporter Acknowledgment of Receipt of Materials Transporter 1 Printed/Typed Name Preston Sanders Signature Preston Sanders Month 12 Day 06 Year 07 Transporter 2 Printed/Typed Name Signature Month Day Year								
DESIGNATED FACILITY	18. Discrepancy								
	18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection Manifest Reference Number: U.S. EPA ID Number								
	18b. Alternate Facility (or Generator) Facility's Phone: U.S. EPA ID Number								
	18c. Signature of Alternate Facility (or Generator) Month Day Year								
	19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems) 1. H134 2. 3. 4.								
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a Printed/Typed Name Vickie Hoffbauer Signature Vickie Hoffbauer Month 12 Day 16 Year 07									

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by
corresponding to Newpark Environmental Services LLC Profile Number

1105081043BH

and Manifest Number

002164716JJK

was processed and disposed by method of injection on

December 07, 2007

A handwritten signature in black ink, appearing to read "Philip O. Clark". The signature is written over a horizontal line.

Newpark Environmental Services LLC Representative

Dec. 07 2006 12:23PM P1/2

FAX NO. : 4097941355

FROM : NEWPARK BIG HILL

Estimate

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

E 125478

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

DEC 06 2007

GATE DATE: 12/06/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE: TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL TONS	%OIL	% SOLIDS
002164716JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL TRANSPORTER: CES	5458.00	0.090	GAL	491.22 23	0	3

PO NUMBER:

COMMENTS:

TOTAL: 491.22

*Amtex
w/w*

POSTED

12/10/07

THANK YOU

EPAHQ010003323

EPA Form 8700-22 (Rev. 3-05) Previous editions are obsolete.

TRANSPORTER'S COPY

EPAHQ010003324

METTLER TOLEDO

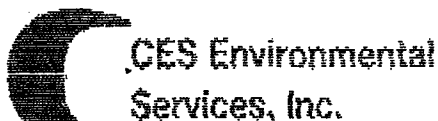
Ucker AM

AUTHORIZED SIGNATURE

Newpark Env. Services LC CN 43362
26400 WILBER RD
WINNE TX 77665

ID	4	GROSS	80560 lb (1)
VEHICLE	620	TARE	35260 lb
TIME	12:19 PM	NET	45300 lb
DATE	12 06 07		

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number EXCESQG	2. Page 1 of	3. Emergency Response Phone (713) 896-4488	4. Manifest Tracking Number 002164716 JJK	
5. Generator's Name and Mailing Address 4517 Brittonville Road Houston, TX 77041			Generator's Site Address (if different than mailing address) 4517 Brittonville Road Houston, TX 77041			
Generator's Phone: (713) 896-4488			Generator's EPA ID Number: TX0008550461			
6. Transporter 1 Company Name CE Environmental Services, Inc.			U.S. EPA ID Number			
7. Transporter 2 Company Name			U.S. EPA ID Number			
8. Designated Facility Name and Site Address 7640 Wilcox Rd Waxahatchie, TX 75165			U.S. EPA ID Number W/A			
Facility's Phone: (409) 254-3119						
GENERATOR	9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.
			No.	Type		
		1. HAZARDOUS DOT REGULATED WASTE			5000	
		2.				
		3.				
		4.				
13. Waste Codes 1155 1210 1215						
14. Special Handling Instructions and Additional Information Waste water						
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.						
Generator's/Offeror's Printed/Typed Name			Signature		Month Day Year 11/21/07	
INT'L	16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____					
	17. Transporter Acknowledgment of Receipt of Materials					
TRANSPORTER	Transporter 1 Printed/Typed Name Preston Sanders		Signature <i>Preston Sanders</i>		Month Day Year 11/21/07	
	Transporter 2 Printed/Typed Name		Signature		Month Day Year	
DESIGNATED FACILITY	18. Discrepancy					
	18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 5458 lbs					
	Manifest Reference Number:					
	18b. Alternate Facility (or Generator) U.S. EPA ID Number					
	Facility's Phone:					
	18c. Signature of Alternate Facility (or Generator)					Month Day Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)						
	1.	2.	3.	4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a						
Printed/Typed Name Mike H			Signature <i>Mike H</i>		Month Day Year 11/21/07	



4804 Griggs Road
Houston, TX 77021
Tel. (713) 876-1480
Fax. (713) 876-1678

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc. - Houston) Nonhaz
Wastewater

Date : 12/6/2007 Manifest # : 2164716

AMTEX Machine Products, Inc.

Client : Ticket : 54198

Phone : 7138964488 Newpark Environmental Services, LLC

Consignee : LLC

CES Environmental Services, Inc.

Transporter : 1

Signature *[Signature]*

Signature

Leave CES Yard : 745

Arrive At Destination 1125

Arrive At Customer : 830

Begin Unloading : 1155

Begin Loading : 900

Finish Unloading : 1210

Finish Loading : 925

Leave Destination : 1215

Leave Customer : 935

Arrive At CES Yard :

Customer PO #:

Total Hours:

CES Unload:

Gross Weight :

Ending Odometer :

Tare Weight :

Beginning Odometer :

Net Weight : 5000-G

Total Miles :

Driver : Sanders, Preston

Tractor # : 295

Tote # :

Signature : *[Signature]*

Trailer # : 259

Box # :

Job Comments/Equipment :

White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHO010003327



**CES Environmental
Services, Inc.**

JOB INFORMATION PROFILE

Folder ID : AMTEX Machine Products, Inc.(AMTEX Machine Products, Inc.-Houston) Nonhaz Wastewater

Customer : AMTEX Machine Products, Inc.

Driver : Sanders, Preston

Address : 4517 Brittmoore Road

Helper :

City,State,Zip : Houston TX , 77041

Date : 12/6/2007

Time : 0600

CES Contact : () -

Truck # 295

Trailer # 256

Job Description :

Contact is Fred Leach 281-224-8121

1) Vac out WASTEWATER as directed

2) Haul load to Newpark and offload

ID #: 54198

CUSTOMER INFORMATION

OPERATION HOURS:

SHIPPING/RECEIVING CONTACT:

AFTER HOURS CONTACT:

Open :		Name:		Name:	
Close:		Number:		Number:	

RECEIVING INFORMATION

OPERATION HOURS:

SHIPPING/RECEIVING CONTACT:

AFTER HOURS CONTACT:

Open :		Name:		Name:	
Close:		Number:		Number:	

PURCHASE ORDER NUMBER REQUIRED:

☐ YES ☐ NO

IF YES, P.O. #:

PPE REQUIRED:

☐ YES ☐ NO

IF YES, WHAT?

HACSC REQUIRED:

☐ YES ☐ NO

IF YES, WHAT?

CAN CUSTOMER LOAD US :

☐ YES ☐ NO

WASHOUT ANTICIPATED:

☐ YES ☐ NO

ROPPER PUMP:

☐ YES ☐ NO

BOX LINER REQUIRED

☐ YES ☐ NO

LOADING/UNLOADING TRAILER TYPE:

☐ REAR ☐ BELLY
☐ DOES NOT MATTER

BOX NUMBER:

CES OWNS BOX:

☐ YES ☐ NO

CUSTOMER OWNS BOX:

☐ YES ☐ NO

CES RENTED BOX:

☐ YES ☐ NO

CUSTOMER RENTED BOX:

☐ YES ☐ NO

AMOUNT OF HOSE NEEDED:

SIZE:

DRUM DOLLY NEEDED:

☐ YES ☐ NO

PALLET JACK NEEDED:

☐ YES ☐ NO

NEWPARK ENVIRONMENTAL SERVICES LLC.

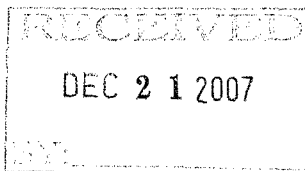
INVOICE

Invoice Date
December 17, 2007

Invoice Number
7822

Profile Number
1105081043BH

81015 CES ENVIRONMENTAL SERVICES INC
Accounts Payable
4904 GRIGGS ROAD
HOUSTON TX 77021



Contract
AFE

Date	Manifest #	Receipt #	Invoice Description	Line Total	Purchase Order
12/3/2007	002164622JJK	125430	SLUDGES 4765.00 GAL @ 0.090 / GAL	428.85	478.85
12/6/2007	002164716JJK	125478	SLUDGES 5458.00 GAL @ 0.090 / GAL	491.22	491.22
12/11/2007	002164837JJK	125604	LIQUIDS 4868.00 GAL @ 0.060 / GAL	292.08	292.08
12/14/2007	002164938JJK	125732	LIQUIDS 4624.00 GAL @ 0.060 / GAL	277.44	277.44
Invoice Total				<u>\$1,489.59</u>	

AMTEX

POSTED

Net Terms -- 30 Days

REMIT TO: NEWPARK ENVIRONMENTAL SERVICES, LLC. * P.O. BOX 62600, DEPT. 1089 * NEW ORLEANS, LA 70162-2600 * (888) 984-4445

EPAH0010003329

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

125430

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

GATE DATE: 12/03/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL	TONS	%OIL	% SOLIDS
002164622JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL TRANSPORTER: CES	4765.00	0.090	GAL	428.85	20	0	4

PO NUMBER:

COMMENTS:

UNSCHEDULED

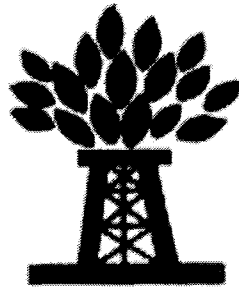
TOTAL: 428.85

THANK YOU

EPAHQ0010003331

DISPOSAL CERTIFICATE

Newpark Environmental Services LLC located at 26400 Wilber Road, Winnie, Texas operates a nonhazardous industrial waste processing and injection facility, disposing of nonhazardous class 1, 2 and 3 wastes under Texas Natural Resource Conservation Commission Permit No. SW-39098.



This document certifies that the waste stream generated by
corresponding to Newpark Environmental Services LLC Profile Number

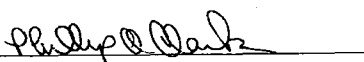
1105081043BH

and Manifest Number

002164622JJK

was processed and disposed by method of injection on

December 04, 2007


Newpark Environmental Services LLC Representative

Estimate

NEWPARK ENVIRONMENTAL SERVICES

TICKET NUMBER

E 125430

GATE RECEIPT

PROFILE NUMBER: 1105081043BH
CUSTOMER NAME: CES ENVIRONMENTAL SERVICES INC
BID NUMBER: I-1043

DEC 06 2007

GATE DATE: 12/03/2007
GENERATOR: AMTEX MACHINE
CONTAINER TYPE: TT

MANIFEST #	WASTE DESCRIPTION:	CHARGES	VOLUME	RATE	UOM	TOTAL TONS	%OIL	% SOLIDS
002164622JJK	PHOSPHATING LIQUIDS	PHOSPHATING LIQUIDS 3 - 10 SOLIDS AND <5% OIL TRANSPORTER: CES	4765.00	0.090	GAL	428.85 20	0	4

PO NUMBER:

COMMENTS:
UNSCHEDULED

TOTAL: 428.85

Amtex
w/w

POSTED

12/10/07

12/3 & 12/6

THANK YOU

Dec. 04 2006 03:03PM P1

FAX NO. : 4097941355

FROM : NEWPARK BIG HILL

EPAHQ010003333

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number TXCESQG	2. Page 1 of 1	3. Emergency Response Phone (713) 896-4488	4. Manifest Tracking Number 002164622 JJK			
5. Generator's Name and Mailing Address AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041 Generator's Phone: (713) 896-4488			Generator's Site Address (if different than mailing address) AMTEX Machine Products, Inc. 4517 Brittmoore Road Houston, TX 77041 (713) 896-4488					
6. Transporter 1 Company Name CES Environmental Services, Inc.			U.S. EPA ID Number TXD008950461					
7. Transporter 2 Company Name			U.S. EPA ID Number					
8. Designated Facility Name and Site Address Newark Environmental Services, LLC 26400 Wilbur Rd Winnie TX, 77665 Facility's Phone: (409) 754-3119			U.S. EPA ID Number N/A					
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))		10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
			No.	Type				
	Non-RCRA/Non DOT regulated rinse water		1	TT	5,000	G	CESQ1042	
	2.							
	3.							
4.								
14. Special Handling Instructions and Additional Information Feeder ID: AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc. Houston) Nonhazardous Waste 11a) 1102405728H 11b) 1230900 11c) 639098 11d) 47650 CES Job # - 52452								
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true.								
Generator's/Offeree's Printed/Typed Name [Signature]			Signature [Signature]		Month Day Year 12/03/07			
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____								
17. Transporter Acknowledgment of Receipt of Materials								
Transporter 1 Printed/Typed Name Deick Tucker			Signature [Signature]		Month Day Year 12/03/07			
Transporter 2 Printed/Typed Name			Signature		Month Day Year			
18. Discrepancy								
18a. Discrepancy Indication Space <input checked="" type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection 47650 Gals								
18b. Alternate Facility (or Generator) Manifest Reference Number: _____ U.S. EPA ID Number								
Facility's Phone: _____								
18c. Signature of Alternate Facility (or Generator)						Month Day Year		
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)								
1. H13U		2.		3.		4.		
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a								
Printed/Typed Name View telephone			Signature [Signature]		Month Day Year 12/03/07			

Newark Env. Services LC CN 43226
26400 WILBER RD
WINNE TX 77665

METTLER TOLEDO

TIME 7:50 AM NET
DATE 12 03 07

74360 1b (1)

34620 1b

39740 1b



AUTHORIZED SIGNATURE



**CES Environmental
Services, Inc.**

4804 Griggs Road
Houston, TX 77021
Tel. (713) 676-1480
Fax. (713) 676-1676

Transportation Work Ticket

Folder ID : AMTEX Machine Products, Inc. (AMTEX Machine Products, Inc.-Houston) Nonhaz
Wastewater

Date : 12/3/2007

Manifest # : _____

AMTEX Machine Products, Inc.

Client : _____

Ticket : 53852

Phone : 7138964488

Consignee : Newpark Environmental Services,
LLC

CES Environmental Services, Inc.

Transporter : _____

Signature X [Signature]

Signature _____

Leave CES Yard :	<u>3:00</u>	Arrive At Destination	<u>6:30</u>
Arrive At Customer :	<u>3:45</u>	Begin Unloading :	<u>7:32</u>
Begin Loading :	<u>3:56</u>	Finish Unloading :	<u>7:46</u>
Finish Loading :	<u>4:25</u>	Leave Destination :	<u>7:54</u>
Leave Customer :	<u>4:30</u>	Arrive At CES Yard :	_____

Customer PO #:

Total Hours:

CES Unload: ☐

Gross Weight : _____

Ending Odometer : _____

Tare Weight : _____

Beginning Odometer : 66843

Net Weight : _____

Total Miles : _____

Driver : Tucker, Derek

Tractor # : 294

Tote # : _____

Signature : [Signature]

Trailer # : 205

Box # : _____

Job Comments/Equipment : _____

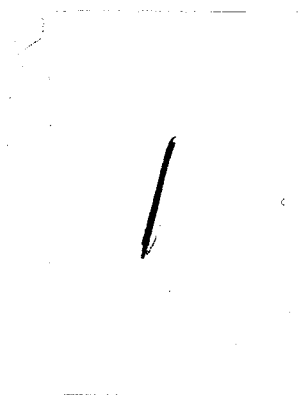
White (CES Office)

Yellow (CES Office / Billing)

Pink (CES Office / IFTA)

Golden Rod (Customer)

EPAHO010003336



MATERIAL SAFETY DATA SHEET

Date Printed: 07/13/2006

Date Updated: 02/05/2006

Version 1.5

Section 1 - Product and Company Information

Product Name ACETAL, 99%
Product Number A902
Brand ALDRICH

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ACETAL	105-57-7	No

Formula C6H14O2
Synonyms Acetaal (Dutch) * Acetal * Acetal diethylique
(French) * Acetale (Italian) *
1,1-Diaethoxy-aethan (German) * Diaethylacetal
(German) * 1,1-Diethoxy-ethaan (Dutch) *
1,1-Diethoxyethane * Diethyl acetal *
1,1-Dietossietano (Italian) * Ethane,
1,1-diethoxy- * Ethylidene diethyl ether * USAF
DO-45
RTECS Number: AB2800000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU): Irritant.
May form explosive peroxides. Irritating to eyes and skin.

HMIS RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 1

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes
Peroxide Former: Yes

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

- 5.8 °F - 21.0 °C Method: closed cup

EXPLOSION LIMITS

Lower: 1.65 % Upper: 10.4 %

AUTOIGNITION TEMP

230 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

Unsuitable: Do not use water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS

Heat-, light-, and moisture-sensitive. Do not distill to dryness.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Clear liquid Color: Colorless	
Property	Value	At Temperature or Pressure
Molecular Weight	118.18 AMU	
pH	N/A	
BP/BP Range	100.0 - 103.0 °C	
MP/MP Range	N/A	
Freezing Point	N/A	
Vapor Pressure	20 mmHg	20 °C
Vapor Density	4.1 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.826 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	- 5.8 °F - 21.0 °C Method: closed cup	
Explosion Limits	Lower: 1.65 %	

	Upper: 10.4 %
Flammability	N/A
Autoignition Temp	230 °C
Refractive Index	1.381
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions of Instability: May form peroxides on prolonged storage. Date container and periodically test for peroxides.

Conditions to Avoid: Light. Heat. Moisture.

Materials to Avoid: Strong oxidizing agents, Strong reducing agents, Strong bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract. Material may be irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

Exposure can cause: CNS depression. Gastrointestinal disturbances. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral
Rat
4600 mg/kg
LD50

Intraperitoneal
Rat
900 MG/KG
LD50

Oral
Mouse
3500 mg/kg
LD50

Intraperitoneal
Mouse

500 MG/KG
LD50

Oral
Rabbit
3545 mg/kg
LD50

IRRITATION DATA

Skin
Rabbit
500 mg
24H

Remarks: Mild irritation effect

Section 12 - Ecological Information

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Acetal
UN#: 1088
Class: 3
Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Acetal
IATA UN Number: 1088
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: F-Xi
Indication of Danger: Highly Flammable. Irritant.
R: 11-36/38
Risk Statements: Highly flammable. Irritating to eyes and skin.
S: 9-16-33
Safety Statements: Keep container in a well-ventilated place.
Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable (USA) Highly Flammable (EU).
Irritant.
Risk Statements: May form explosive peroxides. Irritating to eyes and skin.
Safety Statements: Keep away from sources of ignition - no

smoking. Do not empty into drains. Take precautionary measures against static discharges. Keep container tightly closed in a cool well-ventilated place.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2006 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

U.S. DEPARTMENT OF LABOR Occupational Safety and Health Administration MATERIAL SAFETY DATA SHEET	
May be used to comply with OSHA's Hazard Communications Standard. 29CFR 1910.1200. Standard must be consulted for specific requirements.	

SECTION I		
MANUFACTURER'S NAME/REPACKAGED BY: Certified Safety Manufacturing Company, Inc.	TELEPHONE NO. (816) 483-9090	
ADDRESS: 1400 Chestnut Avenue Kansas City, Missouri 64127		
IDENTITY (AS USED ON LABEL): Alcohol (IPA) 99%	DATE PREPARED: 07/25/06	DATE REVIEWED: 09/25/06

SECTION II – HAZARDOUS INGREDIENTS/IDENTITY INFORMATION				
HAZARDOUS COMPONENTS (Specific Chemical Identity; Common Name(s)):				
	%	OSHA PEL	ACGIH TLV	OTHER LIMITS RECOMMENDED
Isopropyl Alcohol (IPA) CAS# 67-63-0	99%	400 ppm		OSHA STEL=500ppm
(Isopropanol, 2-Propanol, Dimethyl Carbinol)				
THIS PRODUCT IS PRODUCED AS A HEALTH CARE ITEM "FOOD, DRUG OR COSMETIC, INTENDED FOR PERSONAL CONSUMPTION BY EMPLOYEES WHILE IN THE WORKPLACE" TO WHICH THE HAZARDOUS COMMUNICATIONS REQUIREMENTS OF: 29CFR1910.1200 (A) & (B) DO NOT APPLY, AS SPECIFICALLY STATED IN 29CFR 1910.1200 (B) (5) (V)				

SECTION III – PHYSICAL DATA			
BOILING POINT (°F):	181°F	SPECIFIC GRAVITY (H ₂ O= 1):	.878
VAPOR PRESSURE (mm Hg.):	33 mm 20 °C (68°F)	MELTING POINT:	No Data
SOLUBILITY IN WATER:	Miscible	% volatiles by Vol.:	No Data
PH:	No Data	FREEZING POINT:	-127°F
APPEARANCE AND ODOR: Colorless, volatile liquid with the odor of rubbing alcohol			

SECTION IV – FIRE AND EXPLOSION HAZARD DATA			
FLASH POINT (Method used): 53° F (TAG Open Cup)	FLAMMABLE LIMITS: LEL: 2% UEL: 12%		
EXTINGUISHING MEDIA: Use water fog, alcohol foam, dry chemical or CO ₂			
SPECIAL FIRE FIGHTING PROCEDURES: Special protective equipment for fire-fighters: Clear area of unprotected personnel. Wear complete turnout gear. Cool containers exposed to fire with water.			
UNUSUAL FIRE AND EXPLOSION HAZARDS: Containers exposed to intense heat from fires should be cooled with large amounts of water to prevent buildup of internal pressure due to vapor generation which could result in container rupture.			

SECTION V – REACTIVITY DATA			
STABILITY:	STABLE	√	CONDITIONS TO AVOID: None known
INCOMPATABILITY (Materials to avoid): Strong oxidizers, acetaldehyde, chlorine, ethylene oxide, acid, isocyanates			
HAZARDOUS POLYMERIZATION:	MAY OCCUR		CONDITIONS TO AVOID: Heat, sparks, and open flame
	WILL NOT OCCUR	√	Do NOT store in aluminum >120° F
HAZARDOUS PRODUCTS: CO ₂ and unidentified organic compounds may be formed of decomposition.			

SECTION VI – HEALTH HAZARD DATA			
ROUTE(S) OF ENTRY:	INHALATION?: yes	SKIN?: yes	INGESTION?: yes DERMAL CONTACT?: yes
HEALTH HAZARDS (<i>Acute and Chronic</i>): N/A			
CARCINOGENICITY: Not identified as a carcinogen by the NTP Annual Report on Carcinogens, IARC Monographs or by OSHA.			
SIGNS AND SYMPTOMS OF OVEREXPOSURE: Inhalation: Mild irritation of eyes, nose and throat.			
Ingestion: Drowsiness, headache Dermal contact: Dry, cracking skin Acute Effects: Irritation of skin and/or upper respiratory tract as noted above. Acute CNS depression may be manifested as giddiness, headache, dizziness and/or nausea. Chronic Effects: Chronic exposure can result in skin irritation and contact dermatitis. Pre-existing disorders of the skin, eyes, and respiratory tract may be exacerbated by exposure to isopropyl alcohol.			
EMERGENCY AND FIRST AID PROCEDURES: Inhalation: Remove victim to fresh air and provide oxygen if breathing is difficult. Seek medical attention if breathing continues to be difficult. Eye: Flush eyes with copious amount of water for a least 15 minutes. Skin: Flush with water. If irritation persists, seek medical attention.			
Ingestion: Do not induce vomiting if victim is unconscious or drowsy. Seek medical attention or contact the poison control center.			

SECTION VII – SPILL OR LEAK PROCEDURES
STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Large Spills: Eliminate all ignition sources. Equipment must be grounded to prevent sparking. Evacuate the area of unprotected personnel. Contain source of spill. Dike or otherwise confine spilled product. Uncontrolled releases to air, land or water may be reportable to the National Response Center (1-800-424-8802.) Small Spills: Take up with absorbent material and placed in non-leaking container; seal tightly. Dispose of absorbent.
DISPOSAL CONSIDERATIONS: Contact your supplier or a licensed contractor for detailed recommendations.
DISPOSAL REGULATORY REQUIREMENTS: Follow applicable Federal, state, and local regulations. Consider fuel blending as an alternative to incineration. ENVIRONMENTAL DEGRADATION: Should be removed readily from soils and water by volatilization and biodegradation.

SECTION VIII – SPECIAL PROTECTION INFORMATION		
VENTILATION:	LOCAL EXHAUST: <input checked="" type="checkbox"/>	SPECIAL: None
	MECHANICAL (<i>General</i>): None	OTHER: None
Engineering measures: Use explosion-proof ventilation equipment as necessary to maintain airborne concentrations below the PEL. Ground all containers to prevent static sparks during fluid transfers.		
PROTECTIVE GLOVE: Gloves		EYE PROTECTION: Goggles
OTHER PROTECTIVE EQUIPMENT: NIOSH approved respiratory protection required when above PEL/TWA.		

SECTION IX – SPECIAL PRECAUTIONS
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Handling Use non-sparking tools to open containers. Maintain appropriate class of fire extinguishers nearby in case of fire.
Storage: Store in tightly closed containers in a cool, dry area away from heat and other possible ignition sources.
Recommended Hygiene Practices: Clean PPE and work clothing contaminated prior to reuse. After working with this product, be sure to wash before eating, smoking, drinking or applying cosmetics.

THIS INFORMATION AND RECOMMENDATIONS HEREIN ARE TAKEN FROM SOURCES BELIEVED TO BE ACCURATE AS OF THE DATE, HOWEVER CERTIFIED SAFETY MAKES NO WARRANTY WITH RESPECT TO THE ACCURACY OF THIS INFORMATION OR THE SUITABILITY OF THE RECOMMENDATIONS, AND ASSUMES NO LIABILITY TO ANY USE THEREOF.....



5501 Baker Road Baytown, Texas 77520
P O Box 1516 Baytown, Texas 77522 281/424-4505 FAX 281/424-3532

MATERIAL SAFETY DATA SHEET

ADVASOL Solvent

PRODUCT IDENTIFICATION

Chemical Name: Petroleum Distillates

Chemical Family: Petroleum Hydrocarbon

Trade Name: ADVASOL 150 and ADVASOL 150E (7% max. naphthalene)

Synonyms: Aromatics Solvent, Wash Oil

Revision Date: September 18, 2001

Manufacturer /Distributor: Advanced Aromatics, L.P. 5501 Baker Road Baytown, TX 77520

EMERGENCY CONTACT: (281) 424-4505 24 hour number: (281)424-9566 Chemtrec: (800) 424-9300

HAZARDOUS COMPONENTS

The following chemical components have been determined to be hazardous under OSHA's Hazard Communication Std. 29 CFR 1910.1200, and are listed in Table Z-1 1910.1000 (Toxic and Hazardous Substances).

CAS No.	Material or Component	Percentage
91-20-3	Naphthalene	14% Maximum
64742-94-5	Heavy aromatic petroleum naptha	84% - 94%

PHYSICAL DATA (TYPICAL)

Specific Gravity: .95-.98 @ 60°F	Boiling Point: 400°F
Vapor Density (Air=1): 4.9	Freezing Point: -35°F
Vapor Pressure (PSIA): <1 @ 100°F	Evaporation Rate (Butyl Acetate =1):<1.0
Solubility In Water at 1ATM & 25°C: NEGLIGIBLE	Viscosity: 2cst @ 100°F

Physical Description: Dark brown/green liquid with an aromatic odor.

FIRE AND EXPLOSION DATA

Flash Point: >150 °F (PMCC)

Flammable Limits in Air % by Volume: Lower: 1.9

ACCEPTED SUBJECT TO SUBSEQUENT
VERIFICATION OF QUANTITY AND QUALITY
Upper: 6.8

Extinguishing Media: Use water, foam, carbon dioxide or dry chemical.

Special Fire Fighting Procedures: Wear complete personal protective equipment. SCBA required.

Unusual Fire and Explosion Hazard: None Known.

ASAP

For "Disclaimer of Liability", see the statement on Page 5.

T. deport - CEL
#1085
Detergent - Hot wash
Cold Rinse
Dry Dry

REACTIVITY DATA

Stability: Product is stable under normal storage conditions.

Conditions to Avoid: Extreme heat. Avoid contact with strong oxidizers (e.g. Chlorine, Peroxides, etc.) Toxic fumes and heat can be generated.

Incompatibility: Strong Oxidizers

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products When Heated: CO and CO₂ may be formed in the event of combustion. Toxic fumes may be formed during combustion.

HMIS RATING

NFPA 704 Rating: 0 – Insignificant 1 – Slight 2 – Moderate 3 – High 4 – Extreme

Health: 2 Flammability: 2 Reactivity: 1 Special Hazard: None Personal Protection: B

HEALTH HAZARD INFORMATION**Symptoms of Exposure:**

This is a combustible liquid that should be kept away from ignition sources. The product may cause skin irritation from prolonged exposure. Avoid breathing vapors, prolonged exposure could cause irritation to the respiratory system. Avoid contact when possible and use personnel equipment while handling this material. Use only in properly ventilated areas. Keep all containers closed when not in use. Empty containers will still contain residue, and should not be reused.

Health Effects:

ACUTE – Inhalation of high concentrations can cause nausea, dizziness, vomiting, disorientation, or unconsciousness.

IRONIC – Prolonged skin contact can cause dry skin and defatting, resulting in irritation or dermatitis.

Ingestion: Do not take internally. Seek medical attention if exposure occurs.

Skin: Exposure may irritate skin. Wash skin thoroughly for 15 minutes if contact occurs.

Inhalation: Inhalation of vapors may cause irritation to lungs.

Eyes: May cause eye irritation. Seek medical attention if exposure occurs.

Special Medical Conditions Aggravated by Exposure: None known.

Primary Route of Entry: Skin contact.

Exposure Limits: None Established

Petroleum Distillate TLV = 500PPM (2000 mg/m³) / Naphthalene TLV = 10 ppm (50 mg/m³)

Carcinogen Status: Not listed on (NTP) National Toxicology Program "Annual Report on Carcinogens", or (IARC) Intl. Agency for Research on Cancer "Monographs", and is not classified by OSHA as a carcinogen. NTP studies TR-410 and TR-500 show evidence of increased tumor growth in rodents based upon exposure to Naphthalene.

Toxicity: At this time there are no toxicity studies that exist for this product.

FIRST AID

Ingestion: Do not induce vomiting. Contact physician.

Skin: Remove soiled clothing and wash with soap and water. Contact physician. If irritation persists, contact physician.

Inhalation: Remove from area. If breathing irregular, administer oxygen.

Eyes: Flush eyes with water for at least 15 minutes. Contact physician.

SPILL OR LEAK PROCEDURES / WASTE DISPOSAL

In Case of a Transportation Accident, Contact CHEMTREC at 1-800/424-9300.

IN CASE OF SPILLS OR RELEASE: For small spill, use solid absorbent and shovel into disposal container. For large spills, dike the area to facilitate salvage or disposal. Shut off ignition sources and avoid breathing vapors. Avoid runoff into sewers and advise authorities.

Refer to DOT NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK for handling information.

Waste Disposal Method: Waste material should be disposed of consistent with federal, state, and local regulations. See Regulatory information below.

Disposal: If this product becomes a waste, it does not meet the criteria of a hazardous waste as defined under the RCRA 40 CFR 261, since it does not have the characteristics of Subpart C, nor is listed under Subpart D.

As a non-hazardous liquid waste, it should be solidified with stabilizing agents (sand, fly ash, or cement), so that no free standing liquids remain before disposal into an industrial landfill. A non-hazardous liquid waste can also be incinerated in accordance with local, state and federal regulations.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Have appropriate NIOSH approved respirator available. Organic cartridge respirator recommended.

Gloves: Impermeable gloves such as rubber, neoprene, PVC, viton, etc.

Eyes: Chemical splash goggles or faceshield. Eyewash facilities should be available in the area.

Ventilation: General use of local exhaust as required to control exposure.

SPECIAL PRECAUTIONS

Storage and Handling: Product should be stored away from source of ignition, or oxidizing agents. Prevent skin contact.

TRANSPORTATION INFORMATION

The proper shipping name / hazard class may vary by packaging, properties, and mode of transportation.

Proper shipping names are:

ALL TRANSPORTATION MODES: Petroleum Distillates, N.O. S.
(Unless Specified Below)

UN/ID No.:	UN 1268
HAZARD CLASS :	3 – Combustible liquid
PACKING GROUP:	III
CARGO AIRCRAFT LIMIT:	220L
PASSENGER AIRCRAFT LIMIT:	60L

TECHNICAL NAME(s):	Naphthalene, Methylnaphthalene(s)
RQ LBS. (Per pkg.):	700 Lbs. (at 14% Naphthalene in Advasol 150)
RQ COMPONENTS (s):	Naphthalene (100 lbs. Require reporting)
FLASH POINT:	150 Deg F

TRANSPORTATION: Petroleum Distillates, N.O. S.
(IATA / ICAO)

UN/ID No.: UN1268
 HAZARD CLASS : 9
 PACKING GROUP: III
 CARGO AIRCRAFT LIMIT: No Limit
 PASSENGER AIRCRAFT LIMIT: No Limit

MARINE TRANSPORTATION: Environmentally Hazardous Substances, Liquid N.O.S
 (IMDG / IMO)

UN/ID No.: UN 3082
 HAZARD CLASS : 9
 PACKING GROUP: III

MARINE POLLUTANT (s): None

REGULATORY INFORMATION RIGHT-TO-KNOW PROGRAM

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40CRF372.

CAS No.	Material or Component	% by Weight
91-20-3	Naphthalene	14% maximum
64742-94-5	Heavy aromatic petroleum naphtha	84%-94%

THE FOLLOWING FEDERAL REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STD: 29 CFR 1910.1200 and 29 CFR 1910.1000 Table Z-1, Z-2, and Z-3.

Based on our hazard evaluation, the following components in this product are hazardous and the reasons are listed.

HEAVY AROMATIC NAPHTHA – Combustible, skin irritant.

NAPHTHALENE – Eye irritant

NAPHTHALENE – OSHA – 10ppm (50mg/m³) TWA for 8 hour workday, STEL = 15ppm (75 mg/m³).

ACGIH – 10ppm (52mg/m³) TWA for 8 hour workday, STEL = 15ppm (79 mg/m³).

CERCLA, 40 CFR 117,302: This product contains naphthalene, a reportable quantity (RQ) substance. The RQ for Naphthalene is 100 lbs. If a spill of Advasol 150 contains 100 or more pounds of Naphthalene, it requires notification to the National Response Center, Washington D.C. (1-800-424-8802). There may also be state and local requirements to report spills.

SARA TITLE III Section 302 - This product does not contain any components regulated under SARA TITLE III, Section 302 (Extremely Hazardous Substance).

Section 311, 312 - (MSDS Information) 40 CFR 370, This product has been determined to be hazardous, and should be reported under the following EPA hazard categories:

--xx--immediate (acute) health hazard

-----Delayed (chronic) health hazard

--xx--Fire Hazard

-----Sudden release of pressure hazard

-----Reactive hazard

Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Section 313 - This product contains the following component subject to regulation under SARA TITLE III, Section 313: Naphthalene

TOXIC SUBSTANCE CONTROL ACT (TSCA): The components in this product are on the TSCA inventory.

RESOURCE CONSERVATION and RECOVERY ACT (RCRA): Naphthalene is subject to regulation under 40 CFR 261

40 CFR 261 Subpart C & D. The hazardous waste code for naphthalene is U165.

CLEAN WATER ACT (CWA): Naphthalene is subject to regulation under sections 307 and 311 of the CWA.

CLEAN AIR ACT (CAA): Naphthalene is a listed "Hazardous air pollutant (HAP)" under Section 112 of the CAA.

STATE REGULATIONS:

California Proposition 65: Benzene, known to California to cause cancer, may be present as an impurity or residue.

Michigan Critical Materials : This product contains the following ingredient(s) identified on the Michigan Critical Materials Register:
Naphthalene

State Right to Know Laws: The following ingredient(s) are disclosed for compliance with state right to know laws:

METHYLNAPHTHALENE(S)	91-12-0
NAPHTHALENE(S)	91-20-3

INTERNATIONAL REGULATIONS: This product is a WHMIS controlled product under the House of Commons of Canada Bill C-70 (class B3 and class D2A). The product contains the following substance(s), from the Ingredient Disclosure List or has been evaluated based on it's toxicological properties, to contain the following hazardous ingredient(s):

HEAVY AROMATIC PETROLEUM NAPHTHA	64742-94-5	84%-94%
NAPHTHALENE	91-20-3	14% maximum

***ALL INFORMATION ON THIS MSDS MUST BE INCLUDED IN ALL MSDS THAT ARE
COPIED AND DISTRIBUTED FOR THIS MATERIAL.***

information is provided for the customers of Advanced Aromatics; however, it does not address in detail the use, storage or handling of the product. Users of the product, considering their use, storage or handling of the product, may need to develop additional procedures. The information should not be relied on to insure compliance by the customer with any federal, state or local legal requirements. Information provided herein, are not product specifications.

SIGMA-ALDRICH

MATERIAL SAFETY DATA SHEET

Date Printed: 04/03/2007
Date Updated: 08/22/2006
Version 1.1

Section 1 - Product and Company Information

Product Name ACETONE-2,4-DNPH, 50MG, NEAT
Product Number 442436
Brand SUPELCO
Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
ACETONE	1567-89-1	No
2,4-DINITROPHENYLHYDRAZONE, ENVIRONM		
ENTAL STANDARD		

Formula C9H10N4O4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Irritant.

Irritating to eyes, respiratory system and skin.

Possible sensitizer.

HMIS RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

NFPA RATING

HEALTH: 2

FLAMMABILITY: 0

REACTIVITY: 0

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious

amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep tightly closed.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Solid	
Property	Value	At Temperature or Pressure
Molecular Weight	238.21 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	126.0 - 128.0 °C	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
SG/Density	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	Log Kow: 1.51	
Decomposition Temp.	N/A	
Flash Point	N/A	
Explosion Limits	N/A	
Flammability	N/A	
Autoignition Temp	N/A	
Refractive Index	N/A	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	N/A	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Nitrogen oxides.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: May be harmful if inhaled. Material is irritating to mucous membranes and upper respiratory tract.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None

Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xi

Indication of Danger: Irritant.

R: 36/37/38

Risk Statements: Irritating to eyes, respiratory system and skin.

S: 26

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Irritant.

Risk Statements: Irritating to eyes, respiratory system and skin.

Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

US Statements: Possible sensitizer.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.

DSL: No

NDSL: Yes

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not

purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale. Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only.

Redox Logo with tag line

MATERIAL SAFETY DATA SHEET

1. IDENTIFICATION

Product Name : FATTY ALCOHOL TECH 9/8

Other Names : C9-C11 SYNTHETIC ALCOHOL ETHOXYLATE (C9-11) ALKYL ALCOHOL, ETHOXYLATE

Uses : Surfactant.

Organisation	Location	Telephone	Ask For
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	02-97333000	Technical Officer
Poisons Information Centre	Westmead NSW	131126	
		1800-251525	

2. HAZARD IDENTIFICATION

Hazardous according to criteria of NOHSC

HARMFUL; IRRITANT

Risk Phrases

R22 Harmful if swallowed.
R41 Risk of serious damage to eyes.

Safety Phrases

S25 Avoid contact with eyes.
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S37/39 Wear suitable gloves and eye/face protection.

ERMA New Zealand Approval Code : No Data

HSNO Hazard Classification : 6.1D 6.3A 8.3A 9.1D 9.3C

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website www.ermanz.govt.nz should be consulted for a full list of triggered controls and cited regulations

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportions (%)
ALCOHOLS, C9-11, ETHOXYLATED	[68439-46-3]	100

4. FIRST AID MEASURES

Description of necessary measures according to routes of exposure

Swallowed

Do NOT induce vomiting. Rinse mouth out with water. Give water to drink. Seek immediate medical assistance.

Eye

Immediately flush eyes with copious amounts of water holding eyelids open. Transport to hospital or medical centre.

Skin

<http://content.msdsonline.com/dataentrypdfs/SUFFAY30.htm> (1 of 6) [10/5/2006 4:19:22 PM]

Remove contaminated clothing. Flush affected area with copious amounts of water. If irritation persists, seek medical assistance.

Inhaled

Remove victim from exposure to fresh air. Keep at rest until fully recovered. If rapid recovery does not occur, seek medical assistance.

Advice to Doctor

Treat symptomatically based on individual reactions of patient and judgement of doctor. Product can cause corneal burns.

Additional Information

Aggravated medical conditions caused by exposure

No information available on medical conditions aggravated from exposure to this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media

In case of fire, appropriate extinguishing media include large fires - water fog, fine water spray or foam. small fires - foam, dry chemical, carbon dioxide and water spray.

Hazards from Combustion Products

This product is a combustible liquid. Heating can cause expansion or decomposition leading to violent rupture of containers. Excessive heat will lead to accelerated oxidative degradation. On burning, product will emit toxic fumes including carbon dioxide and carbon monoxide.

Special protective precautions and equipment for fire fighters

Fire fighters should wear a self contained breathing apparatus and full protective clothing along with protective equipment.

Flammability Conditions

Combustible liquid.

Additional Information

Hazchem Code : N/A

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures

Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Do NOT allow product to reach drains or waterways. If product does enter a waterway advise the Environmental Protection Authority or your local Waste Authority. Use spark-proof tools and equipment.

Methods and materials for containment and clean up

Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect material into suitable, labelled, dry, sealable containers and hold for safe disposal. Once pick up is complete, flush the spill site with water to eliminate any residue. Hold contaminated water for treatment.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling. Take precautionary measures against static discharges by bonding and grounding equipment.

Conditions for safe storage, including any incompatibles

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Open containers slowly in order to control possible pressure release. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Bulk storage tanks should be diked (bunded). Use non-sparking tools and equipment. Store away from incompatible materials including oxidizing agents, acids and ignition sources. Protect from direct sunlight. This product is classified as a "C2" Combustible Liquid for the purpose of storage and handling.

Container Type

Stainless steel or mild steel vessels are recommended. Do NOT use copper or its alloys.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards

No exposure standard has been established for this product by the Australian National Occupational Health and Safety Commission (NOHSC). However, the exposure standard for dust not otherwise specified is 10mg/m³ (for inspirable dust) and 3mg/m³ (for respirable dust).

Biological Limit Values

No biological limit allocated for this product.

Engineering Controls

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area.

Personal Protection

RESPIRATOR: If inhalation risk from spray mists exists, wear an NIOSH approved half face-piece filter respirator suitable for organic particulates meeting the requirements of AS/NZS1715 and AS/NZS1716. EYES: Chemical goggles. HANDS: Impervious gloves. CLOTHING: Wear overalls and safety shoes to prevent exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	white hazy liquid
Formula	Unspecified.
Odour	mild odour
Vapour Pressure	<10Pa mm Hg (1 atmosphere)
Vapour Density	Not Applicable
Boiling Point	N/A deg C
Melting Point	13°C deg C
Solubility in water	Soluble
Specific Gravity	0.998 (Water = 1)
Flash Point	Closed Cup >184°C
pH	6-8 (1% aqueous solution)
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	Not Applicable
Upper Explosion Limit	Not Applicable
Ignition Temperature	355°C
Specific Heat Value	Not Applicable
Particle Size	Not Applicable
Volatile Organic Compounds (VOC) content	Not Applicable
Evaporation Rate	Not Applicable
Viscosity	21cP
Percent Volatile	No Data
Octanol/Water partition coefficient	Not Applicable
Saturated Vapour Concentration	Not Applicable
Additional Characteristics	Not Applicable
Flame Propagation/Burning Rate of Solid Materials	Not Applicable
Properties of materials that may initiate or contribute to fire intensity	Not Applicable
Potential for Dust Explosion	Product is a liquid.
Reactions that Release Flammable Gases	Not Applicable
Fast or Intensely Burning Characteristics	Not Applicable
Non-flammables that could contribute unusual hazards to a fire	Not Applicable
Release of invisible flammable vapours and gases	No Data
Decomposition Temperature	No Data

Additional Information

Solubility: Readily soluble in water, simple alcohols glycol ethers, esters, chlorinated solvents and many aromatic oils and solvents. Insoluble in middle distillate fractions and paraffinic oils.

10. STABILITY AND REACTIVITY

Chemical Stability : Product is stable under normal conditions of use and storage.

Conditions to avoid : Avoid excessive heat, direct sunlight, static discharges and high temperatures.

Incompatible Materials : Incompatible with oxidizing agents, acids and sources of ignition.

On burning, product will emit toxic fumes including carbon dioxide and carbon monoxide.

Hazardous Reactions : Product reacts with oxidizing agents. Excessive heat will lead to accelerated oxidative degradation.

11. TOXICOLOGICAL INFORMATION

Toxicity Data

Oral LD50 Rat: 1000-2700mg/Kg Eye Rabbit: Severely irritating. Environmental and Human Safety of Major Surfactants - Alcohol Ethoxylates and Alkylphenol Ethoxylates, Talmage S. Lewis Publishers 1994.

Health Effects - Acute

Swallowed

Harmful if swallowed. May cause nausea, vomiting, diarrhoea, abdominal pain and irritation of the gastro-intestinal tract.

Eye

Risk of serious damage to eyes. Severe eye irritant. Contamination of eyes can result in permanent injury. Corrosive to eyes, contact can cause cornea burns.

Skin

May result in irritation. Will have a degreasing action on the skin. Repeated/prolonged skin contact may lead to irritant contact dermatitis.

Inhaled

Not expected to cause respiratory irritation unless present as an aerosol. Inhalation of high concentrations of mist may result in respiratory irritation.

12. ECOLOGICAL INFORMATION

Ecotoxicity : No Data

Persistence and degradability : BOD 28 day/COD: 56% (OECD 301C) Dissolved Organic Carbon Removal (DOC removal): 80% (OECD 301C) This product is expected to be readily biodegradable.

Mobility : No information available on mobility for this product.

Additional information

Environmental fate (exposure) : Avoid contaminating drains, sewers and waterways.

Bioaccumulative potential : No information available on bioaccumulation for this product.

13. DISPOSAL CONSIDERATIONS

Disposal

Dispose of in accordance with all local, state and federal regulations.

Special Precautions for land fill or incineration

Product is suitable for disposal by incineration or landfill through an approved agent. Drain container thoroughly, vent in a safe place away from sparks and fire as residue may cause an explosion hazard. Do not puncture, cut or weld unclean containers. Send to drum recoverer or metal reclaimer.

14. TRANSPORT INFORMATION

UN No.

Shipping Name	Not Allocated
Dangerous Goods Class	
Subsidiary Risk	FATTY ALCOHOL TECH 9/8
Pack Group	
Precaution for User	C.2
Hazchem Code	None Allocated

None Allocated

HARMFUL; IRRITANT

N/A

15. REGULATORY INFORMATION

Poisons Schedule	N/A
EPG	N/A
AICS Name	ALCOHOLS, C9-11, ETHOXYLATED
NZ Toxic Substance	N
Additional information	No Data

16. OTHER INFORMATION

Revision Date : Sep 2005

Additional information

Legend to abbreviations and acronyms:

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
CO2	Carbon Dioxide
COD	Chemical Oxygen Demand
ERMA	Environmental Risk Management Authority
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
LC50	LC stands for lethal concentration. LC50 is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD50	LD stands for "Lethal Dose". LD50 is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
Misc	miscible
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
UN	United Nations (number)
cm2	square centimetres
deg C (°C)	degrees Celsius
g	gram
g/cm3	grams per cubic centimetre
g/l	grams per litre
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m3	kilograms per cubic metre
ltr	Litre

mbar millibar
 mg milligram
 mg/24H milligrams per 24 hours
 mg/kg milligrams per kilogram
 mg/m3 milligrams per cubic metre
 miscible liquids form one homogeneous liquid phase regardless of the amount of either component present
 mm millimetre
 ppb parts per billion
 ppm parts per million
 ppm/2h parts per million per 2 hours
 ppm/6h parts per million per 6 hours
 tne tonne
 ug/24H micrograms per 24 hours
 wt weight

Literature references:

No Data

Sources for data:

No Data



Australia New Zealand Sydney Office Adelaide Auckland 2 Swettenham Road telephone: +61 (0)2 97333000
 Brisbane Christchurch NSW +61 (0)2 2566 97333111
 Melbourne Hawkes Bay Australia www.redox.com Perth sydney@redox.com Sydney

This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemical specifications for the substance. Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
(425) 889-3400

G-4001

For Emergency Assistance involving chemicals call - CHEMTREC (800) 424-9300

The Version Date and Number for this MSDS is : 04/13/2007 - #008

PRODUCT NAME: ACETONE
MSDS NUMBER: MZA0446
DATE ISSUED: 04/11/2007
SUPERSEDES: 08/04/2004
ISSUED BY: 008614

PRODUCT NAME:
ACETONE

Distributed by:
Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
425-889-3400

ACETONE

1. PRODUCT IDENTIFICATION

SYNONYMS: DIMETHYLKETONE; 2-PROPANONE; DIMETHYLKETAL
CAS NO: 67-64-1
MOLECULAR WEIGHT: 58.08
CHEMICAL FORMULA: (CH₃)₂CO

Distributed by:
Univar USA Inc.
17425 NE Union Hill Road
Redmond, WA 98052
425-889-3400

2. COMPOSITION/INFORMATION ON INGREDIENTS

INGREDIENT	CAS NO	PERCENT	HAZARDOUS
ACETONE	67-64-1	99 - 100%	YES

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. VAPOR MAY CAUSE FLASH FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS CENTRAL NERVOUS SYSTEM.

POTENTIAL HEALTH EFFECTS

INHALATION:

INHALATION OF VAPORS IRRITATES THE RESPIRATORY TRACT. MAY CAUSE COUGHING, DIZZINESS, DULLNESS, AND HEADACHE. HIGHER CONCENTRATIONS CAN PRODUCE CENTRAL NERVOUS SYSTEM DEPRESSION, NARCOSIS, AND UNCONSCIOUSNESS.

INGESTION:

SWALLOWING SMALL AMOUNTS IS NOT LIKELY TO PRODUCE HARMFUL EFFECTS. INGESTION OF LARGER AMOUNTS MAY PRODUCE ABDOMINAL PAIN, NAUSEA AND VOMITING. ASPIRATION INTO LUNGS CAN PRODUCE SEVERE LUNG DAMAGE AND IS A MEDICAL EMERGENCY. OTHER SYMPTOMS ARE EXPECTED TO PARALLEL INHALATION.

SKIN CONTACT:

IRRITATING DUE TO DEFATTING ACTION ON SKIN. CAUSES REDNESS, PAIN, DRYING AND CRACKING OF THE SKIN.

EYE CONTACT:

VAPORS ARE IRRITATING TO THE EYES. SPLASHES MAY CAUSE SEVERE IRRITATION, WITH STINGING, TEARING, REDNESS AND PAIN.

CHRONIC EXPOSURE:

PROLONGED OR REPEATED SKIN CONTACT MAY PRODUCE SEVERE IRRITATION OR DERMATITIS.

AGGRAVATION OF PRE-EXISTING CONDITIONS:

USE OF ALCOHOLIC BEVERAGES ENHANCES TOXIC EFFECTS. EXPOSURE MAY INCREASE THE TOXIC POTENTIAL OF CHLORINATED HYDROCARBONS, SUCH AS CHLOROFORM, TRICHLOROETHANE.

4. FIRST AID MEASURES

INHALATION:

REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, GIVE OXYGEN. GET MEDICAL ATTENTION.

INGESTION:

ASPIRATION HAZARD. IF SWALLOWED, VOMITING MAY OCCUR SPONTANEOUSLY, BUT DO NOT INDUCE. IF VOMITING OCCURS, KEEP HEAD BELOW HIPS TO PREVENT ASPIRATION INTO LUNGS. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. CALL A PHYSICIAN IMMEDIATELY.

SKIN CONTACT:

IMMEDIATELY FLUSH SKIN WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES. REMOVE

CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. WASH CLOTHING BEFORE REUSE. THOROUGHLY CLEAN SHOES BEFORE REUSE.

EYE CONTACT:

IMMEDIATELY FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, LIFTING UPPER AND LOWER EYELIDS OCCASIONALLY. GET MEDICAL ATTENTION.

5. FIRE FIGHTING MEASURES

FIRE:

FLASH POINT: -20C (-4F) CC

AUTOIGNITION TEMPERATURE: 465C (869F)

FLAMMABLE LIMITS IN AIR % BY VOLUME:

LEL: 2.5; UEL: 12.8

EXTREMELY FLAMMABLE LIQUID AND VAPOR! VAPOR MAY CAUSE FLASH FIRE.

EXPLOSION:

ABOVE FLASH POINT, VAPOR-AIR MIXTURES ARE EXPLOSIVE WITHIN FLAMMABLE LIMITS NOTED ABOVE. VAPORS CAN FLOW ALONG SURFACES TO DISTANT IGNITION SOURCE AND FLASH BACK. CONTACT WITH STRONG OXIDIZERS MAY CAUSE FIRE. SEALED CONTAINERS MAY RUPTURE WHEN HEATED. THIS MATERIAL MAY PRODUCE A FLOATING FIRE HAZARD. SENSITIVE TO STATIC DISCHARGE.

FIRE EXTINGUISHING MEDIA:

DRY CHEMICAL, ALCOHOL FOAM OR CARBON DIOXIDE. WATER MAY BE INEFFECTIVE. WATER SPRAY MAY BE USED TO KEEP FIRE EXPOSED CONTAINERS COOL, DILUTE SPILLS TO NONFLAMMABLE MIXTURES, PROTECT PERSONNEL ATTEMPTING TO STOP LEAK AND DISPERSE VAPORS.

SPECIAL INFORMATION:

IN THE EVENT OF A FIRE, WEAR FULL PROTECTIVE CLOTHING AND NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS WITH FULL FACEPIECE OPERATED IN THE PRESSURE DEMAND OR OTHER POSITIVE PRESSURE MODE.

6. ACCIDENTAL RELEASE MEASURES

VENTILATE AREA OF LEAK OR SPILL. REMOVE ALL SOURCES OF IGNITION. WEAR APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT AS SPECIFIED IN SECTION 8. ISOLATE HAZARD AREA. KEEP UNNECESSARY AND UNPROTECTED PERSONNEL FROM ENTERING. CONTAIN AND RECOVER LIQUID WHEN POSSIBLE. USE NON-SPARKING TOOLS AND EQUIPMENT. COLLECT LIQUID IN AN APPROPRIATE CONTAINER OR ABSORB WITH AN INERT MATERIAL (E. G., VERMICULITE, DRY SAND, EARTH), AND PLACE IN A CHEMICAL WASTE CONTAINER. DO NOT USE COMBUSTIBLE MATERIALS, SUCH AS SAW DUST. DO NOT FLUSH TO SEWER! IF A LEAK OR SPILL HAS NOT IGNITED, USE WATER SPRAY TO DISPERSE THE VAPORS, TO PROTECT PERSONNEL ATTEMPTING TO STOP LEAK, AND TO FLUSH SPILLS AWAY FROM EXPOSURES. US REGULATIONS (CERCLA) REQUIRE REPORTING SPILLS AND RELEASES TO SOIL, WATER AND AIR IN EXCESS OF REPORTABLE QUANTITIES. THE TOLL FREE NUMBER FOR THE US COAST GUARD NATIONAL RESPONSE CENTER IS (800) 424-8802. J. T. BAKER SOLUSORB(R) SOLVENT ADSORBENT IS RECOMMENDED FOR SPILLS OF THIS PRODUCT.

7. HANDLING AND STORAGE

PROTECT AGAINST PHYSICAL DAMAGE. STORE IN A COOL, DRY WELL-VENTILATED LOCATION, AWAY FROM ANY AREA WHERE THE FIRE HAZARD MAY BE ACUTE. OUTSIDE OR DETACHED STORAGE IS PREFERRED. SEPARATE FROM INCOMPATIBLES. CONTAINERS SHOULD BE BONDED AND GROUNDED FOR TRANSFERS TO AVOID STATIC SPARKS. STORAGE AND USE AREAS SHOULD BE NO SMOKING AREAS. USE NON-SPARKING TYPE TOOLS AND EQUIPMENT, INCLUDING EXPLOSION PROOF VENTILATION. CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTY SINCE THEY RETAIN PRODUCT RESIDUES (VAPORS, LIQUID); OBSERVE ALL WARNINGS AND PRECAUTIONS LISTED FOR THE PRODUCT.

=====

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

AIRBORNE EXPOSURE LIMITS:

ACETONE:

-OSHA PERMISSIBLE EXPOSURE LIMIT (PEL):

1000 PPM (TWA)

-ACGIH THRESHOLD LIMIT VALUE (TLV):

500 PPM (TWA), 750 PPM (STEL) A4 - NOT CLASSIFIABLE AS A HUMAN CARCINOGEN

VENTILATION SYSTEM:

A SYSTEM OF LOCAL AND/OR GENERAL EXHAUST IS RECOMMENDED TO KEEP EMPLOYEE EXPOSURES BELOW THE AIRBORNE EXPOSURE LIMITS. LOCAL EXHAUST VENTILATION IS GENERALLY PREFERRED BECAUSE IT CAN CONTROL THE EMISSIONS OF THE CONTAMINANT AT ITS SOURCE, PREVENTING DISPERSION OF IT INTO THE GENERAL WORK AREA. PLEASE REFER TO THE ACGIH DOCUMENT, "INDUSTRIAL VENTILATION, A MANUAL OF RECOMMENDED PRACTICES", MOST RECENT EDITION, FOR DETAILS.

PERSONAL RESPIRATORS (NIOSH APPROVED):

IF THE EXPOSURE LIMIT IS EXCEEDED AND ENGINEERING CONTROLS ARE NOT FEASIBLE, A HALF-FACE ORGANIC VAPOR RESPIRATOR MAY BE WORN FOR UP TO TEN TIMES THE EXPOSURE LIMIT, OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. A FULL-FACE PIECE ORGANIC VAPOR RESPIRATOR MAY BE WORN UP TO 50 TIMES THE EXPOSURE LIMIT, OR THE MAXIMUM USE CONCENTRATION SPECIFIED BY THE APPROPRIATE REGULATORY AGENCY OR RESPIRATOR SUPPLIER, WHICHEVER IS LOWEST. FOR EMERGENCIES OR INSTANCES WHERE THE EXPOSURE LEVELS ARE NOT KNOWN, USE A FULL-FACE PIECE POSITIVE-PRESSURE, AIR-SUPPLIED RESPIRATOR. WARNING: AIR-PURIFYING RESPIRATORS DO NOT PROTECT WORKERS IN OXYGEN-DEFICIENT ATMOSPHERES.

SKIN PROTECTION:

WEAR IMPERVIOUS PROTECTIVE CLOTHING, INCLUDING BOOTS, GLOVES, LAB COAT, APRON OR COVERALLS, AS APPROPRIATE, TO PREVENT SKIN CONTACT.

EYE PROTECTION:

USE CHEMICAL SAFETY GOGGLES AND/OR A FULL FACE SHIELD WHERE SPLASHING IS POSSIBLE. MAINTAIN EYE WASH FOUNTAIN AND QUICK-DRENCH FACILITIES IN WORK AREA.

=====

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:

CLEAR, COLORLESS, VOLATILE LIQUID.

BOILING POINT:

56.5C (133F) @ 760 MM HG

ODOR:

MELTING POINT:

FRAGRANT, MINT-LIKE

-95C (-139F)

SOLUBILITY:

MISCIBLE IN ALL PROPORTIONS IN
WATER.

VAPOR DENSITY (AIR=1):

2.0

SPECIFIC GRAVITY:

0.79 @ 20C/4C

VAPOR PRESSURE (MM HG):

400 @ 39.5C (104F)

PH:

NO INFORMATION FOUND.

EVAPORATION RATE (BUAC=1):

CA. 7.7

% VOLATILES BY VOLUME @ 21C (70F):

100

10. STABILITY AND REACTIVITY

STABILITY:

STABLE UNDER ORDINARY CONDITIONS OF USE AND STORAGE.

HAZARDOUS DECOMPOSITION PRODUCTS:

CARBON DIOXIDE AND CARBON MONOXIDE MAY FORM WHEN HEATED TO DECOMPOSITION.

HAZARDOUS POLYMERIZATION:

WILL NOT OCCUR.

INCOMPATIBILITIES:

CONCENTRATED NITRIC AND SULFURIC ACID MIXTURES; OXIDIZING MATERIALS,
CHLOROFORM, ALKALIS, CHLORINE COMPOUNDS, ACIDS, POTASSIUM T-BUTOXIDE.

CONDITIONS TO AVOID:

HEAT, FLAMES, IGNITION SOURCES AND INCOMPATIBLES.

11. TOXICOLOGICAL INFORMATION

ORAL RAT LD50: 5800 MG/KG; INHALATION RAT LC50: 50,100MG/M3; IRRITATION EYE
RABBIT, STANDARD DRAIZE, 20 MG SEVERE; INVESTIGATED AS A TUMORIGEN,
MUTAGEN, REPRODUCTIVE EFFECTOR.

-----/CANCER LISTS/-----

INGREDIENT	---NTP CARCINOGEN---		IARC CATEGORY
	KNOWN	ANTICIPATED	
ACETONE (67-64-1)	NO	NO	NONE

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE:

WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO READILY
BIODEGRADE. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO LEACH
INTO GROUNDWATER. WHEN RELEASED INTO THE SOIL, THIS MATERIAL IS EXPECTED TO
QUICKLY EVAPORATE. WHEN RELEASED INTO WATER, THIS MATERIAL IS EXPECTED TO
READILY BIODEGRADE. WHEN RELEASED TO WATER, THIS MATERIAL IS EXPECTED TO
QUICKLY EVAPORATE. THIS MATERIAL HAS A LOG OCTANOL-WATER PARTITION

COEFFICIENT OF LESS THAN 3.0. THIS MATERIAL IS NOT EXPECTED TO SIGNIFICANTLY BIOACCUMULATE. WHEN RELEASED INTO THE AIR, THIS MATERIAL MAY BE MODERATELY DEGRADED BY REACTION WITH PHOTOCHEMICALLY PRODUCED HYDROXYL RADICALS. WHEN RELEASED INTO THE AIR, THIS MATERIAL MAY BE MODERATELY DEGRADED BY PHOTOLYSIS. WHEN RELEASED INTO THE AIR, THIS MATERIAL IS EXPECTED TO BE READILY REMOVED FROM THE ATMOSPHERE BY WET DEPOSITION.

ENVIRONMENTAL TOXICITY:

THIS MATERIAL IS NOT EXPECTED TO BE TOXIC TO AQUATIC LIFE. THE LC50/96-HOUR VALUES FOR FISH ARE OVER 100 MG/L.

13. DISPOSAL CONSIDERATIONS

WHATEVER CANNOT BE SAVED FOR RECOVERY OR RECYCLING SHOULD BE HANDLED AS HAZARDOUS WASTE AND SENT TO A RCRA APPROVED INCINERATOR OR DISPOSED IN A RCRA APPROVED WASTE FACILITY. PROCESSING, USE OR CONTAMINATION OF THIS PRODUCT MAY CHANGE THE WASTE MANAGEMENT OPTIONS. STATE AND LOCAL DISPOSAL REGULATIONS MAY DIFFER FROM FEDERAL DISPOSAL REGULATIONS.

DISPOSE OF CONTAINER AND UNUSED CONTENTS IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REQUIREMENTS.

14. TRANSPORT INFORMATION

DOMESTIC (LAND, D.O.T.)

PROPER SHIPPING NAME: ACETONE

HAZARD CLASS: 3

UN/NA: UN1090

PACKING GROUP: II

15. REGULATORY INFORMATION

-----/CHEMICAL INVENTORY STATUS - PART 1/-----				
INGREDIENT	TSCA	EC	JAPAN	AUSTRALIA
ACETONE (67-64-1)	YES	YES	YES	YES

-----/CHEMICAL INVENTORY STATUS - PART 2/-----				
INGREDIENT	KOREA	--CANADA--		PHIL.
		DSL	NDSL	
ACETONE (67-64-1)	YES	YES	NO	YES

-----/FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 1/-----				
INGREDIENT	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	LIST	CHEMICAL CATG
ACETONE (67-64-1)	NO	NO	YES	NO

-----/FEDERAL, STATE & INTERNATIONAL REGULATIONS - PART 2/-----			
INGREDIENT	CERCLA	-RCRA-	-TSCA-
		261.33	8 (D)
ACETONE (67-64-1)	5000	U002	NO

CHEMICAL WEAPONS CONVENTION: NO TSCA 12(B): NO CDTA: YES
SARA 311/312: ACUTE: YES CHRONIC: NO FIRE: YES PRESSURE: NO
REACTIVITY: NO (PURE / LIQUID)

AUSTRALIAN HAZCHEM CODE: 21Y0E
POISON SCHEDULE: NONE ALLOCATED.

WHMIS: THIS MSDS HAS BEEN PREPARED ACCORDING TO THE HAZARD CRITERIA OF
THE CONTROLLED PRODUCTS REGULATIONS (CPR) AND THE MSDS CONTAINS
ALL OF THE INFORMATION REQUIRED BY THE CPR.

=====

16. OTHER INFORMATION

NFPA RATINGS:

HEALTH: 1 FLAMMABILITY: 3 REACTIVITY: 0

For Additional Information:

Contact: MSDS Coordinator - Univar USA

During business hours, Pacific Time - (425) 889-3400

NOTICE

Univar USA expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose with respect to the product or information provided herein, and shall under no circumstances be liable for incidental or consequential damages.

Do not use ingredient information and/or ingredient percentages in this MSDS as a product specification. For product specification information refer to a Product Specification Sheet and/or a Certificate of Analysis. These can be obtained from your local Univar USA Sales Office.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Univar USA makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Univar USA's control. Therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein and does not relate to its use in combination with any other material or in any other process.

END OF MSDS

4-18-07

#32

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Texaco Starplex®

Product Use: Grease**Product Number(s):** CPS221927, CPS221935**Synonyms:** Texaco Starplex® 1, Texaco Starplex® 2**Company Identification**

Chevron Products Company

Global Lubricants

6001 Bollinger Canyon Road

San Ramon, CA 94583

United States of America

Transportation Emergency Response

CHEMTREC: (800) 424-9300 or (703) 527-3887

Health Emergency

Chevron Emergency Information Center. Located in the USA. International collect calls accepted. (800) 231-0623 or (510) 231-0623

Product Information

email : lubemsds@chevrontexaco.com

Product Information: 800-LUBE-TEK

MSDS Requests: 800-414-6737

SECTION 2 COMPOSITION/ INFORMATION ON INGREDIENTS

COMPONENTS	CAS NUMBER	AMOUNT
Highly refined mineral oil (C15 - C50)	Mixture	70 - 95 %wt/wt
Zinc dialkyldithiophosphate	68649-42-3	1 - 5 %wt/wt

SECTION 3 HAZARDS IDENTIFICATION

IMMEDIATE HEALTH EFFECTS**Eye:** Not expected to cause prolonged or significant eye irritation.**Skin:** Contact with the skin is not expected to cause prolonged or significant irritation. Not expected to be harmful to internal organs if absorbed through the skin. High-Pressure Equipment Information: Accidental high-velocity injection under the skin of materials of this type may result in serious injury. Seek medical attention at once should an accident like this occur. The initial wound at the injection site may not appear to be serious at first; but, if left untreated, could result in disfigurement or amputation of the affected part.**Ingestion:** Not expected to be harmful if swallowed**Inhalation:** Not expected to be harmful if inhaled. Contains a petroleum-based mineral oil. May cause respiratory irritation or other pulmonary effects following prolonged or repeated inhalation of mist of oil vapors at levels above the recommended mineral oil mist exposure limit. Symptoms of respiratory irritation may include coughing and difficulty breathing.

SECTION 4 FIRST AID MEASURES

Eye: No specific first aid measures are required. As a precaution, remove contact lenses, if worn, and flush eyes with water.

Skin: No specific first aid measures are required. As a precaution, remove clothing and shoes if contaminated. To remove the material from skin, apply a waterless hand cleaner, mineral oil, or petroleum jelly. Then wash with soap and water. Discard contaminated clothing and shoes or thoroughly clean before reuse.

Ingestion: No specific first aid measures are required. Do not induce vomiting. As a precaution, get medical advice.

Inhalation: No specific first aid measures are required. If exposed to excessive levels of material in the air, move the exposed person to fresh air. Get medical attention if coughing or respiratory discomfort occurs.

Note to Physicians: In an accident involving high-pressure equipment, this product may be injected under the skin. Such an accident may result in a small, sometimes bloodless, puncture wound. However, because of its driving force, material injected into a fingertip can be deposited into the palm of the hand. Within 24 hours, there is usually a great deal of swelling, discoloration, and intense throbbing pain. Immediate treatment at a surgical emergency center is recommended.

SECTION 5 FIRE FIGHTING MEASURES

FIRE CLASSIFICATION:

OSHA Classification (29 CFR 1910.1200): Not classified by OSHA as flammable or combustible.

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

FLAMMABLE PROPERTIES:

Flashpoint: (Cleveland Open Cup) 200 °C (392 °F) (Min)

Autoignition: No Data Available

Flammability (Explosive) Limits (% by volume in air): Lower: Not Applicable Upper: Not Applicable

EXTINGUISHING MEDIA: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

PROTECTION OF FIRE FIGHTERS:

Fire Fighting Instructions: This material will burn although it is not easily ignited. For fires involving this material, do not enter any enclosed or confined fire space without proper protective equipment, including self-contained breathing apparatus.

Combustion Products: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, and unidentified organic compounds will be evolved when this material undergoes combustion.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Protective Measures: Eliminate all sources of ignition in vicinity of spilled material.

Spill Management: Clean up spills immediately, observing precautions in Exposure Controls/Personal Protection section.

Reporting: Report spills to local authorities and/or the U.S. Coast Guard's National Response Center at (800) 424-8802 as appropriate or required.

SECTION 7 HANDLING AND STORAGE

Precautionary Measures: Keep out of the reach of children.

General Handling Information: Avoid contaminating soil or releasing this material into sewage and drainage systems and bodies of water.

Static Hazard: Electrostatic charge may accumulate and create a hazardous condition when handling this material. To minimize this hazard, bonding and grounding may be necessary but may not, by themselves, be sufficient. Review all operations which have the potential of generating and accumulating an electrostatic charge and/or a flammable atmosphere (including tank and container filling, splash filling, tank cleaning, sampling, gauging, switch loading, filtering, mixing, agitation, and vacuum truck operations) and use appropriate mitigating procedures. For more information, refer to OSHA Standard 29 CFR 1910.106, 'Flammable and Combustible Liquids', National Fire Protection Association (NFPA 77, 'Recommended Practice on Static Electricity', and/or the American Petroleum Institute (API) Recommended Practice 2003, 'Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents'.

Container Warnings: Container is not designed to contain pressure. Do not use pressure to empty container or it may rupture with explosive force. Empty containers retain product residue (solid, liquid, and/or vapor) and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death. Empty containers should be completely drained, properly closed, and promptly returned to a drum reconditioner or disposed of properly.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION**GENERAL CONSIDERATIONS:**

Consider the potential hazards of this material (see Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended. The user should read and understand all instructions and limitations supplied with the equipment since protection is usually provided for a limited time or under certain circumstances.

ENGINEERING CONTROLS:

Use in a well-ventilated area.

PERSONAL PROTECTIVE EQUIPMENT

Eye/Face Protection: No special eye protection is normally required. Where splashing is possible, wear safety glasses with side shields as a good safety practice.

Skin Protection: No special protective clothing is normally required. Where splashing is possible, select protective clothing depending on operations conducted, physical requirements and other substances in the workplace. Suggested materials for protective gloves include: Neoprene, Nitrile Rubber, Silver Shield, Viton.

Respiratory Protection: No respiratory protection is normally required.

If user operations generate an oil mist, determine if airborne concentrations are below the occupational exposure limit for mineral oil mist. If not, wear an approved respirator that provides adequate protection from the measured concentrations of this material. For air-purifying respirators use a particulate cartridge.

Use a positive pressure air-supplying respirator in circumstances where air-purifying respirators may not provide adequate protection.

Occupational Exposure Limits:

Component	Agency	TWA	STEL	Ceiling	Notation
Highly refined mineral oil (C15 - C50)	ACGIH	5 mg/m3	10 mg/m3	--	--
Highly refined mineral oil (C15 - C50)	OSHA Z-1	5 mg/m3	--	--	--

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Attention: the data below are typical values and do not constitute a specification.

Color: Varies depending on specification

Physical State: Semi-solid

Odor: Petroleum odor

pH: Not Applicable

Vapor Pressure: <0.01 mmHg @ 20 °C (68 °F)

Vapor Density (Air = 1): >1

Boiling Point: No Data Available

Solubility: Soluble in hydrocarbon solvents; insoluble in water.

Melting Point: No Data Available

Specific Gravity: 0.9

Viscosity: 15 cSt @ 100°C (212°F) (Min)

Evaporation Rate: No Data Available

SECTION 10 STABILITY AND REACTIVITY

Chemical Stability: This material is considered stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

Incompatibility With Other Materials: May react with strong acids or strong oxidizing agents, such as chlorates, nitrates, peroxides, etc.

Hazardous Decomposition Products: None known (None expected)

Hazardous Polymerization: Hazardous polymerization will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION**IMMEDIATE HEALTH EFFECTS**

Eye Irritation: The eye irritation hazard is based on evaluation of data for similar materials or product components.

Skin Irritation: The skin irritation hazard is based on evaluation of data for similar materials or product components.

Skin Sensitization: No product toxicology data available.

Acute Dermal Toxicity: The acute dermal toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Oral Toxicity: The acute oral toxicity hazard is based on evaluation of data for similar materials or product components.

Acute Inhalation Toxicity: The acute inhalation toxicity hazard is based on evaluation of data for similar materials or product components.

ADDITIONAL TOXICOLOGY INFORMATION:

This product contains petroleum base oils which may be refined by various processes including severe solvent extraction, severe hydrocracking, or severe hydrotreating. None of the oils requires a cancer warning under the OSHA Hazard Communication Standard (29 CFR 1910.1200). These oils have not been listed in the National Toxicology Program (NTP) Annual Report nor have they been classified by the International Agency for Research on Cancer (IARC) as; carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), or possibly carcinogenic to humans (Group 2B). These oils have not been classified by the American Conference of Governmental Industrial Hygienists (ACGIH) as: confirmed human carcinogen (A1), suspected human carcinogen (A2), or confirmed animal carcinogen with unknown relevance to humans (A3).

SECTION 12 ECOLOGICAL INFORMATION

ECOTOXICITY

The toxicity of this material to aquatic organisms has not been evaluated. Consequently, this material should be kept out of sewage and drainage systems and all bodies of water.

ENVIRONMENTAL FATE

This material is not expected to be readily biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Use material for its intended purpose or recycle if possible. Oil collection services are available for used oil recycling or disposal. Place contaminated materials in containers and dispose of in a manner consistent with applicable regulations. Contact your sales representative or local environmental or health authorities for approved disposal or recycling methods.

SECTION 14 TRANSPORT INFORMATION

The description shown may not apply to all shipping situations. Consult 49CFR, or appropriate Dangerous Goods Regulations, for additional description requirements (e.g., technical name) and mode-specific or quantity-specific shipping requirements.

DOT Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS A HAZARDOUS MATERIAL FOR TRANSPORTATION UNDER 49 CFR

Additional Information: NOT HAZARDOUS BY U.S. DOT. ADR/RID HAZARD CLASS NOT APPLICABLE.

IMO/MDG Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER THE IMDG CODE

ICAO/IATA Shipping Description: PETROLEUM LUBRICATING GREASE; NOT REGULATED AS DANGEROUS GOODS FOR TRANSPORT UNDER ICAO

SECTION 15 REGULATORY INFORMATION

EPCRA 311/312 CATEGORIES: 1. Immediate (Acute) Health Effects: NO

2. Delayed (Chronic) Health Effects: NO

3. Fire Hazard: NO

4. Sudden Release or Pressure Hazard: NO

5. Reactivity Hazard: NO

REGULATORY LISTS SEARCHED:

01-1=IARC Group 1	03=EPCRA 313
01-2A=IARC Group 2A	04=CA Proposition 65
01-2B=IARC Group 2B	05=MA RTK
02=NTP Carcinogen	06=NJ RTK
	07=PA RTK

The following components of this material are found on the regulatory lists indicated.

Zinc dialkyldithiophosphate 03, 06

CHEMICAL INVENTORIES:

All components comply with the following chemical inventory requirements: AICS (Australia), DSL (Canada), EINECS (European Union), KECI (Korea), TSCA (United States).

One or more components does not comply with the following chemical inventory requirements: PICCS (Philippines).

NEW JERSEY RTK CLASSIFICATION:

Under the New Jersey Right-to-Know Act L. 1983 Chapter 315 N.J.S.A. 34:5A-1 et. seq., the product is to be identified as follows: PETROLEUM OIL (Grease)

WHMIS CLASSIFICATION:

This product is not considered a controlled product according to the criteria of the Canadian Controlled Products Regulations.

SECTION 16 OTHER INFORMATION

NFPA RATINGS: Health: 0 Flammability: 1 Reactivity: 0

HMIS RATINGS: Health: 1 Flammability: 1 Reactivity: 0

(0-Least, 1-Slight, 2-Moderate, 3-High, 4-Extreme, PPE:- Personal Protection Equipment Index recommendation, *- Chronic Effect Indicator). These values are obtained using the guidelines or published evaluations prepared by the National Fire Protection Association (NFPA) or the National Paint and Coating Association (for HMIS ratings).

LABEL RECOMMENDATION:

Label Category : GREASE 1 - GRS1

REVISION STATEMENT: This revision updates the following sections of this Material Safety Data Sheet: 15

Revision Date: July 26, 2006

ABBREVIATIONS THAT MAY HAVE BEEN USED IN THIS DOCUMENT:

TLV - Threshold Limit Value	TWA - Time Weighted Average
STEL - Short-term Exposure Limit	PEL - Permissible Exposure Limit
	CAS - Chemical Abstract Service Number
ACGIH - American Conference of Government Industrial Hygienists	IMO/IMDG - International Maritime Dangerous Goods Code
API - American Petroleum Institute	MSDS - Material Safety Data Sheet
CVX - Chevron	NFPA - National Fire Protection Association (USA)
DOT - Department of Transportation (USA)	NTP - National Toxicology Program (USA)
IARC - International Agency for Research on Cancer	OSHA - Occupational Safety and Health Administration

Prepared according to the OSHA Hazard Communication Standard (29 CFR 1910.1200) and the ANSI

MSDS Standard (Z400.1) by the Chevron Energy Technology Company, 100 Chevron Way, Richmond, California 94802.

The above information is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made available subsequent to the date hereof may suggest modifications of the information, we do not assume any responsibility for the results of its use. This information is furnished upon condition that the person receiving it shall make his own determination of the suitability of the material for his particular purpose.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: ALUMINUM SULFATE

Revision Date: 02-Jan-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: ALUMINUM SULFATE

Synonyms: None

Chemical Family: Sulfate

Application: Additive

Manufacturer/Supplier Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000

Prepared By Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Aluminum sulfate	10043-01-3	60 - 100%	2 mg/m ³	2 mg/m ³

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin Wash with soap and water. Get medical attention if irritation persists.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 2, Flammability 0, Reactivity 0

HMIS Ratings: Flammability 0, Reactivity 0, Health 2

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust.

Storage Information Store in a cool, dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Dust/mist respirator. (95%)

Hand Protection Normal work gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White
Odor:	Odorless
pH:	3.5
Specific Gravity @ 20 C (Water=1):	1.61
Density @ 20 C (lbs./gallon):	Not Determined

ALUMINUM SULFATE
Page 2 of 5

9. PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	Not Determined
Boiling Point/Range (C):	Not Determined
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Soluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	342.18

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	None known.
Hazardous Decomposition Products	Oxides of sulfur.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: 6200 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined

Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not applicable
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:	None
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15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative. For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
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Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.
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END OF MSDS



Material Safety Data Sheet

Catalog Number: 227822
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

Synonyms: Aluminiumchlorid-hexahydrat; Aluminum chlorohydrate; Aluminum trichloride hexahydrate; Alluminio(cloruro di); Aluminico clorido; Chlorure d'aluminium; Trichloroaluminum

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components
ALUMINIUM CHLORIDE
HEXAHYDRATE

CAS Number
7784-13-6

Weight %
90 - 100%

ACGIH Exposure Limits:
10 mg/m³ TWA (metal
dust)

OSHA Exposure Limits:
15 mg/m³ TWA (total dust); 5
mg/m³ TWA (respirable
fraction)

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: The product causes burns of eyes, skin and mucous membranes

Category of Danger:
Corrosive

Principle routes of exposure: Skin

Inhalation: Vapors or dusts will cause burns of respiratory passages.

Ingestion: Can burn mouth, throat, and stomach

Skin contact: Causes skin burns

Eye contact: Risk of serious damage to eyes

ANSI Classification Corrosive

Statements of hazard CAUSES BURNS TO SKIN AND EYES

VAPORS OR MISTS CAN IRRITATE OR BURN THE RESPIRATORY TRACT.

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g. sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

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Product name: ALUMINUM CHLORIDE

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Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Unusual hazards:

Special protective equipment for firefighters:

Use dry chemical, CO₂, water spray or "alcohol" foam
Burning produces irritant fumes.

None known

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear

Water mist may be used to cool closed containers.

Specific methods:

Flash point:

Not determined

Autoignition temperature:

Not determined

NFPA rating:

NFPA Health: 3

NFPA Flammability: 0

NFPA Reactivity: 2

NFPA Special Note: w

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment.

Environmental precautions:

Prevent product from entering drains.

Methods for cleaning up:

Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment.

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor

Catalog Number: 227822

White crystalline

Product name: ALUMINUM CHLORIDE

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Physical state:	Powder
Formula:	AlCl ₃ - 6H ₂ O
Molecular weight:	241.4
Melting point/range:	> 285°C
Boiling point/range:	No Data available at this time.
Density:	2.4 g/ml
Vapor pressure:	1 hPa (at 20 C)
Evaporation rate:	No data available
Vapor density:	No data available
Solubility (in water):	Soluble Reacts with water
Flash point:	Not determined
Autoignition temperature:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	Polymerization can occur.
Hazardous decomposition products:	Chloride/Hydrochloric acid
Materials to avoid:	Strong oxidising agents
	Contact with air or water produces hydrochloric acid. Water, alcohol, alkenes cause polymerization. Incompatible with nitrobenzene, organic material, bases. Attacks metal in presence of moisture.
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

ALUMINIUM CHLORIDE
HEXAHYDRATE

RTECS Number:

BD0530000

Selected LD50s and LC50s

Oral LD50 Rat : 3311 mg/kg
Oral LD50 Mouse : 1990 mg/kg

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

Primary irritation:

No data is available on the product itself.

Carcinogenic effects:

No data is available on the product itself.

Mutagenic effects:

No data is available on the product itself.

Reproductive toxicity:

No data is available on the product itself.

Components

ALUMINIUM CHLORIDE
HEXAHYDRATE

NIOSH - Health Effects

Lung changes that may lead to pulmonary fibrosis; respiratory and skin irritation

NIOSH - Target Organs

respiratory system, skin, eyes; (for pyro powders, welding fumes, soluble salts and alkyls: respiratory system, skin)

12. ECOLOGICAL INFORMATION

Mobility:

No data available

Bioaccumulation:

No data available

Ecotoxicity effects:

No data available

Aquatic toxicity:

May cause long-term adverse effects in the aquatic environment.

Components ALUMINIUM CHLORIDE HEXAHYDRATE	U.S. DOT - Appendix B - Marine Pollutan Not Listed	U.S. DOT - Appendix B - Severe Marine Pollutants Not Listed	United Kingdom - The Red List: Not Listed
Components ALUMINIUM CHLORIDE HEXAHYDRATE	Germany VCI (WGK) Not Listed	World Health Organization (WHO) - Drinking Water Not Listed	Ecotoxicity - Fish Species Data Not Listed
Components ALUMINIUM CHLORIDE HEXAHYDRATE	Ecotoxicity - Freshwater Algae Data Not Listed	Ecotoxicity - Microtox Data Not Listed	Ecotoxicity - Water Flea Data Not Listed
Components ALUMINIUM CHLORIDE HEXAHYDRATE	EPA - ATSDR Priority List Rank (of 275): 193	EPA - HPV Challenge Program Chemical List Not Listed	California - Priority Toxic Pollutants Not Listed
Components ALUMINIUM CHLORIDE HEXAHYDRATE	California - Priority Toxic Pollutants Not Listed	California - Priority Toxic Pollutants Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.
Do not re-use empty containers

Contaminated packaging:

14. TRANSPORT INFORMATION

UN/Id No: 3260**DOT:**

Proper shipping name: Corrosive solid, acidic, inorganic, n.o.s.
IATA Hazard Label(s): Corrosive
Hazard Class: 8 -
Corrosive materials
Packing group: III

Emergency Response Guide Number (ERG): 154

Components
ALUMINIUM CHLORIDE
HEXAHYDRATE

U.S. DOT - Appendix A Table 1 - Reportable Quantities
Not Listed

TDG (Canada):**WHMIS hazard class:** E corrosive material

IMDG/IMO**Proper shipping name:**

Corrosive solid, acidic, inorganic, n.o.s.

IMDG - Hazard Classifications

IMDG class or division = 8

IMDG - Regulated Substances

UN3260

Components**U.S. DOT - Appendix B - Marine Pollutan****U.S. DOT - Appendix B - Severe Marine
Pollutants**ALUMINIUM CHLORIDE
HEXAHYDRATE

Not Listed

Not Listed

IMO-labels:**15. REGULATORY INFORMATION****International Inventories****Components**

ALUMINIUM CHLORIDE HEXAHYDRATE

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Inventory - China:

Present

EU EINECS List -

231-208-1 (anhydrous)

Inventory - Japan:

1-12

Korean KECL:

KE-01045

Philippines PICCS:

Present

U.S. regulations:**Components**ALUMINIUM CHLORIDE
HEXAHYDRATE**California Proposition 65**

Not Listed

**Massachusetts Right to
Know List:**

[present]

**New Jersey Right to
Know List:**

sn 0057

**Pennsylvania Right to Know
List:**

[present]

ComponentsALUMINIUM CHLORIDE
HEXAHYDRATE**Florida substance List:**

[present] (as Al)

**Rhode Island Right to
Know List:**

Not Listed

**Illinois - Toxic Air
Contaminants**

Not Listed

**Connecticut - Hazardous Air
Pollutants**

Not Listed

ComponentsALUMINIUM CHLORIDE
HEXAHYDRATE**SARA 313 Emission
reporting/Toxic Release
of Chemicals**form R reporting required
for 1.0% de minimis
concentration (as Al) (fume
or dust only)**CERCLA/SARA - Section NTP:
302 Extremely Haz**

Not Listed

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

Catalog Number: 227822

Product name: ALUMINUM CHLORIDE

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State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION**Prepared by: Health & Safety**

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet



ALFOL® 6 Alcohol

Material Safety Data Sheet

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Trade name	ALFOL® 6 Alcohol		
Synonyms	1-Hexanol, Hexyl Alcohol		
Manufacturer/Supplier	Sasol North America Inc.		
Address	900 Threadneedle, Houston, TX 77079		
Telephone	CHEMTREC North America Transportation Emergency (24-hr)	(800) 424-9300	
	CHEMTREC World Wide	(703) 527-3887	
	Other Emergencies (24-hr)	(337) 494-5142	
	MSDS and Product Information (8:00am-4:30pm CST)	(281) 588-3491	
	Health and Safety Information (8:00am-4:00pm CST)	(281) 588-3492	

SECTION 2 COMPOSITION AND INFORMATION ON INGREDIENTS

<u>Components</u>	<u>CAS-No.</u>	<u>Weight %</u>
1-Hexanol	111-27-3	99.5

See Section 8 for Exposure Guidelines and Section 15 for Regulatory Classifications.

SECTION 3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Appearance	Colorless Liquid
Odor	Sweet, pungent
Precautions	WARNING! COMBUSTIBLE LIQUID AND VAPOR. CAUSES EYE AND SKIN IRRITATION. Avoid contact with skin, eyes and clothing. Wash thoroughly after handling. Keep away from heat and flame.
Environmental precautions	Do not flush into surface water or sanitary sewer system. Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish. Rapidly, readily and extensively biodegradable.

POTENTIAL HEALTH EFFECTS

Eyes	Irritating to eyes. May cause corneal inflammation.
Skin	Prolonged skin contact may cause skin irritation and/or dermatitis. Normal care and personal hygiene should prevent skin effects.



ALFOL® 6 Alcohol

Inhalation Irritation of the nose and throat, dizziness, and headache.

Ingestion Depression of central nervous system can occur. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Aspiration (breathing) into lungs, caused while vomiting, may result in severe pulmonary injury.

(See Section 11 for Toxicological Information)

SECTION 4 FIRST AID MEASURES

Eye contact Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Skin contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. When symptoms persist or in all cases of doubt seek medical advice. Wash contaminated clothing before re-use.

Inhalation Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.

Ingestion If swallowed, call a physician or poison control center immediately. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flash point 58 - 61 °C 136 - 142 °F

Autoignition temperature 290 °C 554 °F

Flammable limits in air % by volume **Lower explosion limit:** Approximately 1.2 %(V)
Upper explosion limit: Approximately 8.0 %(V)

Fire and explosion Flash back possible over considerable distance. NFPA Class II combustible liquid.

Extinguishing media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Fire fighting instructions Wear self-contained breathing apparatus and protective suit. Keep containers and surroundings cool with water spray.



ALFOL® 6 Alcohol

SECTION 6 ACCIDENTAL RELEASE MEASURES

Steps to be taken in case of spill or leak Evacuate personnel to safe areas. Remove all sources of ignition. Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see Section 13). Do not flush into surface water or sanitary sewer system.

Spill precautions Material can create slippery conditions.

SECTION 7 HANDLING AND STORAGE

Safe handling advice Ensure all equipment is electrically grounded before beginning transfer operations.

Storage/Transport pressure Ambient.

Load/Unload temperature Ambient.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING MEASURES

Mechanical ventilation may be necessary if working with this product in enclosed areas and/or at elevated temperatures.

PERSONAL PROTECTIVE EQUIPMENT

Eyes When contact with liquid is possible, use a face shield and/or chemical splash goggles. Otherwise use safety glasses with side shields or goggles.

Skin Wear suitable protective clothing, gloves and eye/face protection.

Inhalation Respiratory protection is normally not required except in emergencies or when conditions cause excessive airborne levels of mists or vapors. NIOSH-approved organic vapor air-purifying respirator, self-contained breathing apparatus, or air-supplied respirators where there may be potential for overexposure.



ALFOL® 6 Alcohol

EXPOSURE GUIDELINES

Components **Exposure limit(s)**

No exposure limits have been established for this product.

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit

TWA= Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Liquid
Colour	Colorless
Odour	Sweet, pungent
Form	Liquid
Boiling point/range	156 - 158 °C 313 - 316 °F
Vapour pressure	0.5 mm Hg @ 21 °C
Vapor density	4.5
Solubility (water)	0.59 g/100g Nil.
Viscosity	5.5 cSt @ 21 °C
Melting point/range	-45 °C -49 °F
Density	0.820 g/cm ³ @ 15.5 °C

SECTION 10 STABILITY AND REACTIVITY

Conditions to avoid Keep away from heat and sources of ignition.

Hazardous decomposition products Combustion products include carbon dioxide, carbon monoxide and possibly other unidentified organic compounds.

Incompatibility with other materials Can react with strong oxidizers, inorganic acids, and halogens.

Hazardous polymerization None.



ALFOL® 6 Alcohol

SECTION 11 TOXICOLOGICAL INFORMATION

Eyes Primary irritation index (rabbit): 26.8 (Maximum score is 110.) (unwashed eyes)
Primary irritation index (rabbit): 32.6 (Maximum score is 110.) (washed eyes)
Irreversible corneal damage at day 3, the last day of observation.

Skin Primary irritation index (rabbit): 5.1 (Maximum score is 8.0.)
Acute dermal LD50 (rabbit): 1,500 - 2,300 mg/kg

Inhalation Acute 1 hours (rat): > 21 mg/l All rats survived at indicated concentration.

Ingestion Acute oral LD50(rat): 3,100 - 4,900 mg/kg

CARCINOGENICITY

This product contains no carcinogenic substances.

SECTION 12 ECOLOGICAL INFORMATION

Aquatic toxicity Low toxicity to aquatic organisms such as bacteria, algae, protozoa and fish.

LC50 (P. Promelas (fathead minnow)) 96 hours 97.2 mg/l
Test Substance: 1-Hexanol

Biodegradation Rapidly, readily and extensively biodegradable.

SECTION 13 DISPOSAL CONSIDERATIONS

Waste code D001 - Ignitability (RQ 100 LB) Re-evaluation of the product may be required by the user at the time of disposal, since the product uses, transformations, mixtures, contamination, and spillage may change the classification.

Disposal methods Land disposal of this product is restricted. Dispose of only in accordance with local, state, and federal regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Empty containers Empty containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Empty drums should be completely drained, triple-rinsed, properly bunged and promptly returned to a drum reconditioner, or properly disposed.



ALFOL® 6 Alcohol

SECTION 14 TRANSPORT INFORMATION

- DOT description** Hexanols, 3, UN 2282, III This product is regulated as a hazardous material as defined by the Department of Transportation (DOT).
- IATA description** Hexanols, 3, UN 2282, III This product is regulated as a dangerous good as defined by ICAO/IATA for air transportation.
- IMDG description** Hexanols, 3, UN 2282, III This product is regulated as a dangerous good as defined by the IMDG Code for marine transport.

SECTION 15 REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA classification

Combustible liquid, eye irritant and skin irritant.

TSCA Inventory Listing

Components

CAS-No.

1-Hexanol

111-27-3

SARA 302 Status

Components

CAS-No.

Weight %

Contains no chemicals subject to SARA 302 reporting.

SARA 311/312 Classification

"Immediate (acute) health hazard", "Fire hazard"

SARA 313 Chemical

Components

CAS-No.

Weight %

Contains no chemicals subject to SARA 313 reporting.

CERCLA Hazardous Substance

Components

CERCLA RQ

Weight %

Contains no chemicals subject to CERCLA.



ALFOL® 6 Alcohol

INTERNATIONAL REGULATIONS

Workplace Hazardous Materials Information System (WHMIS) Classification

Class B, Division 3: Combustible liquid.

Class D, Division 2, Subdivision B: Toxic material.

Australian Inventory of Chemical Substances (AICS) Listing

Listed on the AICS.

Japanese Minister of International Trade and Industry (MITI) Inventory Listing

Listed on MITI.

Canadian Domestic Substance List (DSL) Inventory Listing

Listed on the DSL.

European Inventory of Existing Commercial Chemical Substances (EINECS) Listing

Listed on EINECS.

Phillipines Inventory List (PICCS)

Listed on PICCS.

Korean Inventory List

Listed on the ECL.

China Inventory List

Listed on the China inventory.

STATE REGULATIONS

California Safe Drinking Water Act (Prop 65) Listing

Components

CAS-No.

Contains no chemical subject to California Prop 65.

SECTION 16 OTHER INFORMATION

HAZARD RATINGS

	<u>Health</u>	<u>Flammability</u>	<u>Reactivity</u>
HMIS	2	2	0
NFPA	1	2	0



ALFOL® 6 Alcohol

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Material Safety Data Sheet

Version 3.1
Revision Date 05/17/2007
Print Date 08/22/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Glycerol**
Product Number : G9012
Brand : Sigma-Aldrich
Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₃H₈O₃
Molecular Weight : 92.09 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Glycerol			
56-81-5	200-289-5	-	-

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Delayed target organ effects
Mild skin irritant
Mild eye irritant

Target Organs

Kidney

HMIS Classification

Health Hazard: 1
Chronic Health Hazard: *
Flammability: 1
Physical hazards: 0

NFPA Rating

Health Hazard: 1
Fire: 0
Reactivity Hazard: 1

Potential Health Effects**Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

Skin
Eyes
Ingestion

May be harmful if absorbed through skin. May cause skin irritation.
May cause eye irritation.
May be harmful if swallowed.

4. FIRST AID MEASURES

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact

Wash off with soap and plenty of water.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 160 °C (320 °F) - closed cup

Ignition temperature 370 °C (698 °F)

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Avoid breathing vapors, mist or gas.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Glycerol	56-81-5	TWA	10 mg/m3	1994-09-01	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004; Committees on

					Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Inhalable fraction. See Appendix C, paragraph A. Inhalable Particulate Mass TLVs (IPM-TLVs) for those materials that are hazardous when deposited anywhere in the respiratory tract.				
		TWA	5 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	5 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	15 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.
		TWA	5 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Hygiene measures

General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	clear
Odour	odourless

Safety data

pH	5.5
Melting point	20 °C (68 °F)
Boiling point	182 °C (360 °F) at 26.7 hPa (20.0 mmHg) 290 °C (554 °F) 290 °C (554 °F)
Flash point	160 °C (320 °F) - closed cup
Ignition temperature	370 °C (698 °F)
Lower explosion limit	0.9 %(V)
Vapour pressure	< 0.13 hPa (< 0.10 mmHg) at 20 °C (68 °F)
Density	1.2620 g/cm3 1.2610 g/cm3
Water solubility	soluble

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Materials to avoid

Strong bases, Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 12,600 mg/kg

LC50 Inhalation - rat - 1 h - > 570 mg/m3

LD50 Dermal - rabbit - > 10,000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Mild eye irritation - 24 h

Sensitization

no data available

Chronic exposure

no data available

Signs and Symptoms of Exposure

prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting

Potential Health Effects**Inhalation**

May be harmful if inhaled. May cause respiratory tract irritation.

Skin

May be harmful if absorbed through skin. May cause skin irritation.

Eyes

May cause eye irritation.

Ingestion
Target Organs

May be harmful if swallowed.
Kidney,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish

LC50 - Carassius auratus (goldfish) - > 5,000 mg/l

LC50 - Pimephales promelas (fathead minnow) - 44,000 mg/l

LC50 - other fish - > 100,100 mg/l

LC50 - Oncorhynchus mykiss (rainbow trout) - 67,500 mg/l - 96 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards

Delayed target organ effects, Mild skin irritant, Mild eye irritant

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Glycerol

CAS-No.
56-81-5

Revision Date
1991-07-01

Pennsylvania Right To Know Components

Glycerol

CAS-No.
56-81-5

Revision Date
1991-07-01

New Jersey Right To Know Components

Glycerol

CAS-No.
56-81-5

Revision Date
1991-07-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

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Redox Logo with tag line

MATERIAL SAFETY DATA SHEET**1. IDENTIFICATION****Product Name :** TALL OIL FATTY ACID**Other Names :** FATTY ACIDS, TALL OIL**Uses :** Used in coatings, metallurgical and pharmaceuticals.

Organisation	Location	Telephone	Ask For
Redox Pty Ltd	2 Swettenham Road Minto NSW 2566 Australia	02-97333000	Technical Officer
Poisons Information Centre	Westmead NSW	131126	
		1800-251525	

2. HAZARD IDENTIFICATION**NOT Hazardous according to criteria of NOHSC****Risk Phrases****Safety Phrases****ERMA New Zealand Approval Code :** No Data**HSNO Hazard Classification :** No Data

This Material Safety Data Sheet may not provide exhaustive guidance for all HSNO Controls assigned to this substance. The ERMA website www.ermanz.govt.nz should be consulted for a full list of triggered controls and cited regulations

3. COMPOSITION/ INFORMATION ON INGREDIENTS

Chemical Entity	CAS No.	Proportions (%)
TALL OIL FATTY ACID	[61790-12-3]	100

4. FIRST AID MEASURES**Description of necessary measures according to routes of exposure****Swallowed**

Drink plenty of water. Seek medical attention.

Eye

Rinse immediately with plenty of water. Seek medical attention.

Skin

Wash off immediately with soap and water. Seek medical attention.

Inhaled

Move to fresh air. If symptoms or effects persist, seek medical attention.

Advice to Doctor

Treat symptomatically based on individual reactions of patient and judgement of doctor.

Additional Information

Aggravated medical conditions caused by exposure

No information available on medical conditions aggravated from this product.

5. FIRE FIGHTING MEASURES

Extinguishing Media

In case of fire, appropriate extinguishing media include dry powder or foam.

Hazards from Combustion Products

No information available on combustion products.

Special protective precautions and equipment for fire fighters

Fire fighters should wear a self contained breathing apparatus and full protective clothing along with protective equipment.

Flammability Conditions

Combustible liquid.

Additional Information

Hazchem Code : N/A

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures

Personnel involved in the clean up should wear full protective clothing. Eliminate all sources of ignition. Increase ventilation. Avoid walking through spilled product as it may be slippery. Do NOT let product reach drains or waterways. If product does enter a waterway, advise the Environmental Protection Authority or your local Waste Authority. Use spark-proof equipment.

Methods and materials for containment and clean up

Soak up spilled product using absorbent non-combustible material such as sand or soil. Avoid using sawdust or cellulose. When saturated, collect material into suitable, labelled, dry, sealable containers and hold for safe disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Ensure an eye bath and safety shower are available and ready for use. Observe good personal hygiene practices and recommended procedures. Wash thoroughly after handling.

Conditions for safe storage, including any incompatibles

Store in a cool, dry, well-ventilated area. Keep containers tightly closed when not in use. Inspect regularly for deficiencies such as damage or leaks. Protect against physical damage. Store away from incompatible materials. Take precautionary measures against static discharges.

Container Type

Iron drums tightly closed with inner coating with plastic.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

National Exposure Standards

No exposure standard has been established for this product by the Australian National Occupational Health and Safety Commission (NOHSC). However, the exposure standard for dust not otherwise specified is 10mg/m³ (for inspirable dust) and 3mg/m³ (for respirable dust).

Biological Limit Values

No information available on biological limit values for this product.

Engineering Controls

Ensure adequate ventilation system, especially in confined areas.

Personal Protection

RESPIRATOR: Wear an effective dust mask. EYES: Safety glasses. HANDS: Gloves. CLOTHING: Lightweight protective clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Yellow to brown liquid
Formula	Unspecified.
Odour	odourless
Vapour Pressure	Not Applicable
Vapour Density	Not Applicable
Boiling Point	N/A deg C
Melting Point	218°C deg C
Solubility in water	Insoluble
Specific Gravity	N/A (Water = 1)
Flash Point	Open Cup 196°C
pH	5 ()
Flammability Limits (as percentage volume in air)	
Lower Explosion Limit	Not Applicable
Upper Explosion Limit	Not Applicable
Ignition Temperature	Not Applicable
Specific Heat Value	Not Applicable
Particle Size	Not Applicable
Volatile Organic Compounds (VOC) content	Not Applicable
Evaporation Rate	Not Applicable
Viscosity	Not Applicable
Percent Volatile	No Data
Octanol/Water partition coefficient	Not Applicable
Saturated Vapour Concentration	Not Applicable
Additional Characteristics	Not Applicable
Flame Propagation/Burning Rate of Solid Materials	Not Applicable
Properties of materials that may initiate or contribute to fire intensity	Not Applicable
Potential for Dust Explosion	Not applicable. Product is a liquid.
Reactions that Release Flammable Gases	Not Applicable
Fast or Intensely Burning Characteristics	Not Applicable
Non-flammables that could contribute unusual hazards to a fire	Not Applicable
Release of invisible flammable vapours and gases	No Data
Decomposition Temperature	No Data

Additional Information

Solubility: Soluble in alcohol and methyl-alcohol.

10. STABILITY AND REACTIVITY

Chemical Stability : Product is stable under normal conditions of use and storage.

Conditions to avoid : Avoid excessive heat, static discharges and high temperatures.

Incompatible Materials : Avoid oxidizing agents and ignition sources.

Hazardous Decomposition Products : Carbon monoxide and carbon dioxide.

Hazardous Reactions : Hazardous polymerization will not occur.

11. TOXICOLOGICAL INFORMATION

Toxicity Data

No toxicological information available for this product.

Health Effects - Acute

No information available.

No information available.

No information available.

No information available.

Ecotoxicity : No Data

Persistence and degradability : No persistence/degradability information available on this product.

Mobility : No information available on mobility for this product.

Additional information

Environmental fate (exposure) : No information available on environmental fate for this product.

Bioaccumulative potential : No information available on bioaccumulation for this product.

Disposal

Dispose of in accordance with all local, state and federal regulations.

Special Precautions for land fill or incineration

Contact a specialist disposal company or the local waste regulator for advice.

UN No.

Shipping Name Not Allocated

Dangerous Goods Class

Subsidiary Risk TALL OIL FATTY ACID

Pack Group

Precaution for User C.2

Hazchem Code

None Allocated

None Allocated

No Data

N/A

15. REGULATORY INFORMATION

Poisons Schedule

N/A

EPG

N/A

AICS Name

FATTY ACIDS, TALL OIL

NZ Toxic Substance

N

Additional information

No Data

16. OTHER INFORMATION**Revision Date :** May 2006**Additional information****Legend to abbreviations and acronyms:**

<	less than
>	greater than
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstracts Service (Registry Number)
CO ₂	Carbon Dioxide
COD	Chemical Oxygen Demand
ERMA	Environmental Risk Management Authority
HSNO	Hazardous Substance and New Organism
IDLH	Immediately Dangerous to Life and Health
LC ₅₀	LC stands for lethal concentration. LC ₅₀ is the concentration of a material in air which causes the death of 50% (one half) of a group of test animals. The material is inhaled over a set period of time, usually 1 or 4 hours.
LD ₅₀	LD stands for "Lethal Dose". LD ₅₀ is the amount of a material, given all at once, which causes the death of 50% (one half) of a group of test animals
Misc	miscible
N/A	Not Applicable
NIOSH	National Institute for Occupational Safety and Health
NOHSC	National Occupational Health and Safety Commission
OECD	Organization for Economic Co-operation and Development
PEL	Permissible Exposure Limit
RCP	Reciprocal Calculation Procedure
STEL	Short Term Exposure Limit
TLV	Threshold Limit Value
TWA	Time Weighted Average
UN	United Nations (number)
cm ²	square centimetres
deg C (°C)	degrees Celsius
g	gram
g/cm ³	grams per cubic centimetre
g/l	grams per litre
immiscible	liquids are insoluble in each other
kg	kilogram
kg/m ³	kilograms per cubic metre
ltr	Litre
m ³	cubic metre
mbar	millibar
mg	milligram
mg/24H	milligrams per 24 hours
mg/kg	milligrams per kilogram
mg/m ³	milligrams per cubic metre
miscible	liquids form one homogeneous liquid phase regardless of the amount of either component present
mm	millimetre
ppb	parts per billion
ppm	parts per million
ppm/2h	parts per million per 2 hours
ppm/6h	parts per million per 6 hours
tne	tonne
ug/24H	micrograms per 24 hours

wt Weight

Literature references:

No Data

Sources for data:

No Data



Australia New Zealand Sydney Office Adelaide Auckland 2 Swettenham +61 (0)2 telephone: Brisbane Christchurch NSW +61 (0)2 Mintofacsimile: Melbourne Hawkes Bay Australia www.redox.com Perth sydney@redox.com Sydney 2566 97333111

This MSDS summarises Redox Pty Ltd best knowledge of the health and safety hazard information of the selected substance and how to safely handle the selected substance in the workplace however Redox Pty Ltd expressly disclaims that the MSDS is a representation or guarantee of the chemical specifications for the substance. Each user should read the MSDS and consider the information in the context of how the selected substance will be handled and used in the workplace including its use in conjunction with other substances.

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FEED STOCK

Petroleum Distillates/Fuel blendstock MSDS No. MI 160

Revision: 0



Date: 2/20/03

Section 1 - Chemical Product and Company Identification

Product/Chemical Name: Petroleum distillate/fuel blendstock

Chemical Formula: Mixture

CAS Number: Mixture

Synonyms:

General Use: fuel blendstock

Manufacturer: KMCO, LP 16503 Ramsey Road, Crosby, Texas 77532, Phone (281) 328-3501, FAX (281) 328-9528

24-HOUR EMERGENCY NUMBER: CHEMTREC 1-800-424-9300

Section 2 - Composition / Information on Hazardous Ingredients

Ingredient Name	CAS Number	% wt or % vol
Ethanol	64-17-5	0 - 90 %
Toluene	108-88-3	0 - 90 %
Petroleum distillates (lube, mineral oil), (naptha)	8002-05-9	0 - 90 %
Mixed xylenes	1330-20-7	0 - 90 %
Water		0 - 50 %

Ingredient	OSHA PEL		ACGIH TLV		NIOSH REL		NIOSH IDLH
	TWA	STEL	TWA	STEL	TWA	STEL	
Ethanol	1000 ppm	None estab	1000 ppm	None estab	1000 ppm	None estab	3300 ppm
Petroleum distillate	500 ppm	None estab	None estab	None estab	None estab	None estab	
Xylene	100 ppm	None estab	100 ppm	150 ppm	100 ppm	150 ppm	None estab
Toluene	100 ppm	None estab	1090 ppm	None estab	100 ppm	None estab	500 ppm
Water	None estab	None estab	None estab	None estab	None estab	None estab	None estab

Section 3 - Hazards Identification

☆☆☆☆☆ Emergency Overview ☆☆☆☆☆
FOR INDUSTRIAL USE ONLYHMIS
H 2
F 3
R 0

Potential Health Effects

Acute Effects

Inhalation: Vapors can be irritating to eyes, nose and respiratory tract.

Eye: May be mildly irritating to the eyes.

Skin: Liquid is moderately irritating to the skin and could cause dry skin and dermatitis.

Ingestion: Moderately toxic. Can cause CNS depression, nausea, dizziness, vomiting and unconsciousness.

Carcinogenicity:

Medical Conditions Aggravated by Long-Term Exposure: May aggravate an existing dermatitis, throat or respiratory condition.

Chronic Effects: No adverse effects anticipated from available information.

Section 4 - First Aid Measures

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. Get medical attention.

Eye Contact: Immediately flush eyes with plenty of water for at least 15 minutes, Get medical attention.

Skin Contact: Remove contaminated clothing and wash affected skin area thoroughly with soap and water. If skin irritation develops or persists, seek medical attention. Dispose of contaminated clothing in compliance with Federal, State, and local regulations.

Ingestion: Induce vomiting. Get medical attention.

After first aid, get appropriate in-plant, paramedic, or community medical support.

MATERIAL SAFETY DATA SHEET

EPAHQ011000070

Notes:
S. Procedures:**Section 5 - Fire-Fighting Measures****Flash Point:** 80 - 140 °F **Flash Point Method:****Burning Rate:** Not Determined**Autoignition Temperature:** Not Determined.**LEL:** Not Determined.**UEL:** Not Determined.**Flammability Classification:** Severe fire hazard when exposed to heat or flame**Extinguishing Media:** Foam, Dry Chemical, Carbon Dioxide, Water Fog**Unusual Fire or Explosion Hazards:** Dangerous when exposed to heat or flame. Can react with oxidizing materials.**Hazardous Combustion Products:** Carbon monoxide, carbon dioxide, and unidentified organic compounds**Fire-Fighting Instructions:** Use waterspray to cool surfaces. Do not use direct water stream to extinguish fires. Product may travel with water and reignite.**Fire-Fighting Equipment:** Wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full face piece operated in pressure demand or other positive pressure mode.

NFPA

**Section 6 - Accidental Release Measures****Spill /Leak Procedures:** Remove all ignition sources, safely shut off source and contain spilled material. Use protective equipment in emergency and cleanup situations. Restrict water use during cleanup.**Small Spills:** Contain with inert absorbent.**Large Spills****Containment:** Use explosion proof pump to recover liquid. Spilled material and contaminated water or soil may be hazardous to human or other life forms.**Cleanup:** Spilled material becomes a hazardous waste. Material must be disposed of in accordance with all Federal, State, and Local regulations.**Regulatory Requirements:** Follow applicable OSHA regulations (29 CFR 1910.120).**Section 7 - Handling and Storage****Handling Precautions:** Handle material in a well-ventilated area to minimize potential exposure hazard.**Storage Requirements:** Store out of direct sunlight and in a cool well-ventilated area.**Regulatory Requirements:****Section 8 - Exposure Controls / Personal Protection****Engineering Controls:** Controls should be such that adequate ventilation is provided.**Ventilation:** Provide general or local exhaust ventilation systems. Local exhaust ventilation is preferred because it prevents contaminant dispersion into the work area by controlling it at its source.**Administrative Controls:** Normal industrial requirements should be in place.**Respiratory Protection:** Air-purifying respirator can be used in a well-ventilated environment where exposure above PEL/TLV is unlikely. If working in an enclosed area approved supplied air or self-contained breathing apparatus (SCBA) should be used.**Protective Clothing/Equipment:** Wear chemically protective gloves, boots, aprons, and gauntlets to prevent prolonged or repeated skin contact. Wear protective eyeglasses or chemical safety goggles, per OSHA eye- and face-protection regulations (29 CFR 1910.133). Contact lenses are not eye protective devices. Appropriate eye protection must be worn instead of, or in conjunction with contact lenses.**Safety Stations:** Make emergency eyewash stations, safety/quick-drench showers, and washing facilities available in work area.**Contaminated Equipment:** Separate contaminated work clothes from street clothes. Launder before reuse. Remove this material from your shoes and clean personal protective equipment.**Comments:** Never eat, drink, or smoke in work areas. Practice good personal hygiene after using this material, especially before eating, drinking, smoking, using the toilet, or applying cosmetics.

KMCO**Section 9 - Physical and Chemical Properties**

Physical State: Liquid
Appearance and Odor: Liquid with typical odor
Odor Threshold: Not determined
Vapor Pressure: 0.01- 2.5 @ 20°C
Vapor Density (Air=1): Not determined
Formula Weight: Not applicable - mixture
Density: 6.7 - 9.0 lbs/gallon
Specific Gravity (H₂O=1, at 20/20 °C): 0.8 - 1.1 @ 25°C
pH: Not determined

Water Solubility: Not determined
Other Solubilities: Not determined
Boiling Point: 100 - 200 @ 220 MM Hg, typical
Freezing/Melting Point: approx. - 40°C
Viscosity: 1 - 15 st @ 40°C
Refractive Index: Not determined
Surface Tension: Not determined
% Volatile: Not determined
Evaporation Rate (BuAc=1): Not Determined

Section 10 - Stability and Reactivity

Stability: Stable at room temperature in closed containers under normal storage and handling conditions.
Polymerization: Will not occur.
Chemical Incompatibilities: Strong oxidizing agents, strong bases
Conditions to Avoid: Heat and flame, ignition sources, incompatibilities
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, steam and other unidentified organics.

Section 11 - Toxicological Information**Toxicity Data:***

Eye Effects: Mildly to severely irritating to eyes
Skin Effects: Mildly irritating to skin
Inhalation: Can cause headache, drowsiness,
Fatigue
Ingestion: Can cause liver and kidney damage

Acute Inhalation Effects: Can cause liver and kidney damage
Acute Oral Effects: Can cause liver and kidney damage
Chronic Effects: Repeated small exposure via any means can cause
severe kidney problems. Skin allergy can develop.
Carcinogenicity: Not classifiable as a human carcinogen
Mutagenicity:
Teratogenicity:

* See NIOSH, RTECS, for additional toxicity data.

Section 12 - Ecological Information

Ecotoxicity: Data not available.
Environmental Fate: Data not available.
Environmental Degradation: Data not available.
Soil Absorption/Mobility: Data not available.

Section 13 - Disposal Considerations

Disposal: Contact your supplier or a licensed contractor for detailed recommendations. Follow applicable Federal, state, and local regulations.
Disposal Regulatory Requirements: Consult current Federal, state, and local regulations.
Container Cleaning and Disposal: Dispose of container and unused contents in accordance with Federal, state, and local requirements.

Section 14 - Transport Information**DOT Transportation Data (49 CFR 172.101):**

Shipping Name: Flammable,
liquid, n.o.s. (contains petroleum
distillate)

Shipping Symbols:

Hazard Class: 3

ID No.: NA 1993

Packing Group: 3

Label: Flammable Liquid

Special Provisions (172.102):

Packaging Authorizations

- a) Exceptions:
b) Non-bulk Packaging:
c) Bulk Packaging:

Quantity Limitations

- a) Passenger, Aircraft, or Railcar:
b) Cargo Aircraft Only:

Vessel Stowage Requirements

- a) Vessel Stowage:
b) Other:

**Section 15 - Regulatory Information**

CEPCL A Reportable Quantity (RQ): Toluene-1000 lbs. Mixed xylenes - 100 lbs.

SARA 311/312 Codes: Toluene, Xylene

SARA Toxic Chemical (40 CFR 372.65):

SARA EHS (Extremely Hazardous Substance) (40 CFR 355):

OSHA Regulations:

Air Contaminant (29 CFR 1910.1000, Table Z-1, Z-1-A): Xylene

OSHA Specifically Regulated Substance (29CFR 1910):

Section 16 - Other Information

Prepared By: KMCO,LP.

Revision Notes: New MSDS.

Additional Hazard Rating Systems: None

Disclaimer: This product is FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN. DO NOT TAKE INTERNALLY.

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For additional product information, please contact the KMCO, LP., Sales Office at 281-885-1234.

**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

FERRIC NITRATE**1. Product Identification**

Synonyms: Nitric acid, iron (3+) salt nonahydrate; iron nitrate nonahydrate; iron trinitrate
CAS No: 10421-48-4 (Anhydrous) 7782-61-8 (Nonahydrate)
Molecular Weight: 404.00
Chemical Formula: $\text{Fe}(\text{NO}_3)_3 \cdot 9\text{H}_2\text{O}$
Product Codes: J.T. Baker:
2018
Mallinckrodt:
5032, 5657

2. Composition/Information on Ingredients

Ingredient	CAS No.	Percent	Hazardous
Ferric Nitrate	10421-48-4	90 - 100%	Yes

3. Hazards Identification**Emergency Overview**

DANGER! OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

J.T. Baker SAF-T-DATA™ Ratings

(Provided here for your convenience)

Health: 2 - Moderate	Flammability: 0 - None	Reactivity: 3 - Severe (Oxidizer)	Contact: 2 - Moderate
Lab Protection Equip: GOGGLES; LAB COAT; PROPER GLOVES			
Storage Color Code: Yellow (Reactive)			

Potential Health Effects**Inhalation:**

Causes irritation to the respiratory tract. Symptoms may include coughing, shortness of breath.

Ingestion:

Causes irritation to the gastrointestinal tract. Repeated large doses can cause excess iron buildup in the body. Symptoms include gastrointestinal irritation, with abdominal cramps, vomiting, diarrhea, black stool and liver damage.

Skin Contact:

Causes irritation to skin. Symptoms include redness, itching, and pain.

Eye Contact:

Causes irritation, redness, and pain. Prolonged contact may cause a brownish discoloration to the eye.

Chronic Exposure:

Under some circumstances methemoglobinemia occurs in individuals when the nitrate is converted by bacteria in the stomach to nitrite. Chronic exposure may cause liver effects.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney or respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

5. Fire Fighting Measures

Fire:

Not combustible, but substance is a strong oxidizer and its heat of reaction with reducing agents or combustibles may cause ignition. Fire may produce poisonous or irritating gases.

Explosion:

Contact with oxidizable substances may cause extremely violent combustion. Sealed containers may rupture when heated. Sensitive to mechanical impact.

Fire Extinguishing Media:

Dry chemical, foam, carbon dioxide, or water spray.

Special Information:

Wear full protective clothing and breathing equipment for high-intensity fire or potential explosion conditions.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8.

Spills: Sweep up and containerize for reclamation or disposal. Vacuuming or wet sweeping may be used to avoid dust dispersal. US Regulations (CERCLA) require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Guard National Response Center is (800) 424-8802.

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Separate from combustibles, organic or other readily oxidizable materials. Avoid storage on wood floors. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits

-ACGIH Threshold Limit Value (TLV):
1 mg/m³ (TWA) soluble iron salt as Fe

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirator (NIOSH Approved)

If the exposure limit is exceeded and engineering controls are not feasible, a full facepiece particulate respirator (NIOSH type N100 filters) may be worn for up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R or P filter. For emergencies or instances where the exposure levels are not known, use a full-facepiece positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Violet crystals.

Odor:

Slight nitric acid odor.

Solubility:

Freely soluble.

Specific Gravity:

1.684

pH:

No information found.

% Volatiles by volume @ 21°C (70°F)

0

Boiling Point:

< 100°C (< 212°F) Decomposes.

Melting Point:

47.2°C (117°F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products

Emits nitrous oxides when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Substance may react violently with some organic compounds or reducing agents.

Conditions to Avoid:

Heat, shock, friction, incompatibles.

11. Toxicological Information

Oral rat LD50: 3250 mg/kg

Cancer Lists

Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Ferric Nitrate (10421-48-4)	No	No	None

12. Ecological Information**Environmental Fate:**

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations.

Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information**Domestic (Land, D.O.T.)**

Proper Shipping Name: FERRIC NITRATE
Hazard Class: 5.1
UN/NA: UN1466 Packing Group: III
Information reported for product/size: 12KG

International (Water, I.M.O.)

Proper Shipping Name: FERRIC NITRATE
Hazard Class: 5.1
UN/NA: UN1466 Packing Group: III
Information reported for product/size: 12KG

15. Regulatory Information**Chemical Inventory Status**

Ingredient	---Canada---							
	DSL	NDSL	Phil.	TSCA	EC	Japan	Australia	Korea
Ferric Nitrate (10421-48-4)	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes

Federal, State & International Regulations

Ingredient	---SARA 302---		---SARA 313---		CERCLA	261.33	-RCRA-	-TSCA-
	RQ	TPQ	List	Chemical Catg.				
Ferric Nitrate (10421-48-4)	No	No	No	Nitrate Compd.	1000	No	No	8(d)

Chemical Weapons Convention: No **TSCA 12(b):** No **CDTA:** No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No Reactivity: Yes (Mixture / Solid)
Australian Hazchem Code 1[T] **Australian Poison Schedule:** None allocated.
WHMIS: This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings:

Health: 1 Flammability: 0 Reactivity: 1 Other: Oxidizer

Label Hazard Warning:

DANGER! OXIDIZER. CONTACT WITH OTHER MATERIAL MAY CAUSE FIRE. HARMFUL IF SWALLOWED OR INHALED. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

Label Precautions:

Avoid contact with eyes, skin and clothing.
Avoid breathing dust.
Keep from contact with clothing and other combustible materials.
Wash thoroughly after handling.
Store in a tightly closed container.
Use only with adequate ventilation.
Remove and wash contaminated clothing promptly.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In all cases, get medical attention.

Product Use:

Laboratory Reagent.

Revision Information:

No changes.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared By Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)



ALDON CORPORATION

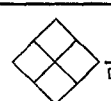
221 Rochester Street
Avon, New York 14414-9409
(585) 226-6177

MSDS No.: RR0090
Effective Date: March 24, 2005

MATERIAL SAFETY DATA SHEET

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	Fertilizer
Chemical Synonyms	Plant Nutrient
Formula	Mixture. See Section II.
Unit Size	up to 1 Kg.
C.A.S. No.	Mixture. See Section II.

	CHEMTREC 800-424-9300 Day 585-226-6177	Health 1 Fire 0 Reactivity 0
NFPA	HAZARD RATING	HMIS *
	MINIMAL SLIGHT MODERATE SERIOUS SEVERE 0 1 2 3 4	

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
Contains: Ammonium phosphate: (CAS 7722-76-1)	-----	None established.
Potassium nitrate: (CAS 7757-79-1)	-----	None established.
Urea: (CAS 57-13-6)	-----	None established.
CAUTION! MAY BE HARMFUL IF SWALLOWED.		

SECTION III PHYSICAL DATA

Melting Point (°F)	N/A	Specific Gravity (H ₂ O = 1)	N/A
Boiling Point (°F)	N/A	Percent Volatile by Volume (%)	N/A
Vapor Pressure (mm Hg)	N/A	Evaporation Rate (=1)	N/A
Vapor Density (Air=1)	N/A		
Solubility in Water	Complete.		
Appearance & Odor	Green, crystalline solid; no odor.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	Non-flammable.	Flammable Limits in Air % by Volume	N/A	Lower	Upper
Extinguisher Media	Use any media suitable for extinguishing supporting fire.				

SPECIAL FIREFIGHTING PROCEDURES

In fire conditions, wear a NIOSH/MSHA-approved self-contained breathing apparatus.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Fire or excessive heat may produce hazardous decomposition products.

D.O.T. NON-REGULATED.

Approved by U.S. Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

Threshold Limited Value

None established for this material or its components. (ACGIH 2001).

Effects of Overexposure

Specific data is not available. May be harmful by ingestion or inhalation. May cause irritation. Exercise appropriate procedures to minimize potential hazards. Target organs: None known.

Emergency and First Aid Procedures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable	Stable	Conditions to Avoid	Excessive temperature and heat
		X		

Incompatibility (Materials to Avoid)

None known.

Hazardous Decomposition Products

Thermal decomposition or burning may produce oxides of nitrogen and phosphorous, ammonia.

Hazardous Polymerization

Conditions to Avoid

May Occur	Will Not Occur
	X

Not applicable.

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Recover for use if not contaminated. Sweep up and place in suitable container for proper disposal. Wash spill area with soap and water.

Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of in accordance with all Federal, State and Local regulations.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type) None needed in normal laboratory handling. If dusty conditions prevail, wear a NIOSH/MSHA-approved respirator.

Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.

Protective Gloves	Rubber.	Eye Protection	Chemical safety glasses.
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Other Protective Equipment	Lab coat, eye wash station.
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SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Keep container tightly closed when not in use.

Store in a cool, dry place. Wash thoroughly after handling.

Other Precautions

Read label on container before using. Do not wear contact lenses when working with chemicals. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Do not take internally. Remove and wash contaminated clothing.

Revision No. 3	Date 03/24/05	Approved	Michael Raszeja	Chemical Safety Coordinator	MR
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: FUEL OIL

SYNONYMS: Used oil fuel.

PRODUCT CODE: Prefix 07FO

PRODUCT USE: Fuel oil for industrial boilers. If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

This number is for
emergency use only. If
you desire non-emergency
product information,
please call a phone
number listed below.

**24-HOUR EMERGENCY PHONE NUMBER
MEDICAL AND TRANSPORTATION (SPILL):**

1-800-468-1760

SUPPLIER: Safety-Kleen Systems, Inc.
5400 Legacy Drive
Cluster II, Building 3
Plano, Texas 75024
USA
1-800-669-5740
www.Safety-Kleen.com

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then 1, then Extension 7500

MSDS FORM NUMBER: 82430

ISSUE: May 10, 2006

ORIGINAL ISSUE: October 31, 1998

SUPERSEDES: January 23, 2003

PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

FUEL OIL

MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL**		ACGIH TLV®		LD ^a	LC ^b
				TWA	STEL	TWA	STEL		
65 to 100*	Used oil	N.Av.	N.Av.	mg/m ³ 5 ^c	N.Av.	mg/m ³ 5 ^c	mg/m ³ 10 ^c	N.Av.	N.Av.
0 to 25*	Water/Solids	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 10*	Hydrocarbon solvents. May include gasoline, diesel fuel, jet fuel, mineral spirits, etc.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 1.5*	Metals. May include lead, iron, zinc, copper, chromium, arsenic, nickel, and others: each below 1.0 WT%.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
0 to 1.0*	Polynuclear aromatics. May include naphthalene, fluoranthene, phenanthrene, pyrene, and others: each below 0.3 WT%.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.

*Even though the concentration range does not fall under the ranges prescribed by WHMIS, this is the actual range which varies with each batch of the product.

N. Av. = Not Available

^aOral-Rat LD₅₀

^bInhalation-Rat LC₅₀

^cBased on Stoddard Solvent

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE

Thick black, viscous liquid with a petroleum odor.

WARNING!

PHYSICAL HAZARDS

Combustible liquid and vapor.

HEALTH HAZARDS

May be harmful if inhaled.

May be harmful if swallowed.

May be harmful if absorbed through the skin.

May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.

May cause skin sensitization.

Suspect cancer hazard. Contains material which can cause cancer. Risk of cancer depends on duration and level of exposure.

Contains material which can cause birth defects.

Contains material which can cause central nervous system damage.

ENVIRONMENTAL HAZARDS

Components may be harmful to aquatic life.

POTENTIAL HEALTH EFFECTS

INHALATION (BREATHING): High concentrations of vapor may be harmful if inhaled. High concentrations of vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES: May cause irritation.

SKIN: May cause skin sensitization. May cause irritation. May be absorbed through the skin and cause harm as noted under **INHALATION (BREATHING)**.

INGESTION (SWALLOWING): May be harmful if swallowed. May cause throat irritation, nausea, vomiting, and central nervous system effects as noted under **INHALATION (BREATHING)**. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

**MEDICAL CONDITIONS
AGGRAVATED BY
EXPOSURE:**

Individuals with pre-existing respiratory tract (nose, throat, and lungs), central nervous system, kidney, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.

CHRONIC:

Prolonged or repeated inhalation may cause toxic effects as noted under **INHALATION (BREATHING)**. Prolonged or repeated exposure may cause oil pneumonia, lung tissue inflammation, fibrous tissue formation, and central nervous system, liver and kidney damage, and may cause mutagenicity, reproductive toxicity, teratogenicity and birth defects. Prolonged or repeated eye contact may cause inflammation of the membrane lining the eyelids and covering the eyeball (conjunctivitis). Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis).

**CANCER
INFORMATION:**

This product contains mineral oils, untreated or mildly treated, which can cause cancer. This product may contain hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics which can cause cancer. Risk of cancer depends on duration and level of exposure. For more information, see **SECTION 11: CARCINOGENICITY**. Also see **SECTION 15: CALIFORNIA**.

POTENTIAL ENVIRONMENTAL EFFECTS

Components may be toxic to aquatic life. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

SECTION 4: FIRST AID MEASURES

**INHALATION
(BREATHING):**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.

EYES:

If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.

SKIN:

Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists. Wash contaminated clothing before reuse.

**INGESTION
(SWALLOWING):**

Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything by mouth to an unconscious person.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

**NOTE TO
PHYSICIANS:**

Treat symptomatically and supportively. Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: 180°F (82°C) Closed Cup

FLAMMABLE LIMITS IN AIR: **LOWER:** Not available **UPPER:** Not available

**AUTOIGNITION
TEMPERATURE:** Not available

**HAZARDOUS COMBUSTION
PRODUCTS:** Decomposition and combustion materials may be toxic. Burning may produce phosgene gas, nitrogen oxides, carbon monoxide and unidentified organic compounds.

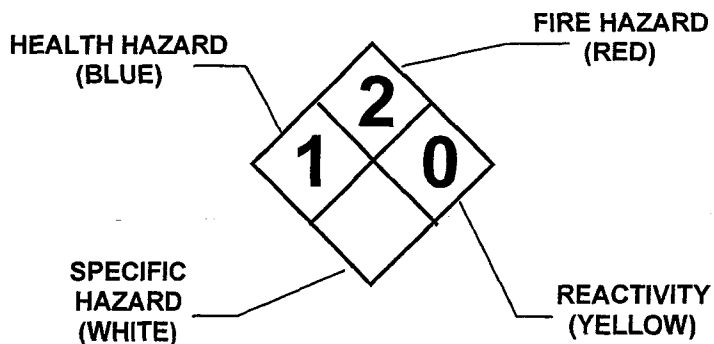
**CONDITIONS OF
FLAMMABILITY:** Heat, sparks, or flame.

EXTINGUISHING MEDIA: Carbon dioxide, regular foam, dry chemical, water spray, or water fog.

NFPA 704

HAZARD IDENTIFICATION:

This information is intended solely for the use by individuals trained in this system.



**FIRE FIGHTING
INSTRUCTIONS:**

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

**FIRE AND EXPLOSION
HAZARDS:**

Vapor explosion hazard indoors, outdoors, or in sewers. Vapors may travel to ignition source and flashback. Vapors will spread along the ground and collect in low or confined areas. Run-off to sewer may create a fire hazard. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean, sparkproof tool into a sealable container for disposal.

Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean, sparkproof tools and explosion-proof equipment. When transferring product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes. Do not smoke while using this product.

**SHIPPING AND
STORING:**

Keep container tightly closed when not in use and during transport. Store containers in a cool, dry place. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources of ignition. Empty product containers may retain product residue and can be dangerous.

See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits. Where explosive mixtures may be present, equipment safe for such locations should be used.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use NIOSH-certified P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Protection provided by air purifying respirators is limited. Do not use N-rated respirators. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1910.134; or in Canada with CSA Standard Z94.4.

EYE PROTECTION: Wearing chemical goggles is recommended. Contact lens use is not recommended without eye protection.

SKIN PROTECTION: Where skin contact is likely, wear chemical impervious protective gloves; use of natural rubber (latex) or equivalent gloves is not recommended.

To avoid prolonged or repeated contact with product where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits or other protective clothing.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

OTHER PROTECTIVE EQUIPMENT: Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR:

Thick black, viscous liquid with a petroleum odor.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

ODOR THRESHOLD: Not available.

MOLECULAR WEIGHT: Not available.

SPECIFIC GRAVITY: 0.8 to 1.0 (water = 1) @ 60°F (16°C)

DENSITY: 6.7 to 8.3 LB/US gal (800 to 1000 g/l)

VAPOR DENSITY: Not available.

VAPOR PRESSURE: Not available.

BOILING POINT: Not available.

FREEZING/MELTING POINT: Not available.

pH: Not applicable.

EVAPORATION RATE: Less than 1 (Butyl acetate = 1)

SOLUBILITY IN WATER: Slight.

FLASH POINT: 180°F (82°C) Closed Cup

FLAMMABLE LIMITS IN AIR: **LOWER:** Not available **UPPER:** Not available

AUTOIGNITION TEMPERATURE: Not available

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.

INCOMPATIBILITY: Avoid acids, alkalies, oxidizing agents, reducing agents, reactive metals or reactive halogens.

REACTIVITY: Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.

HAZARDOUS DECOMPOSITION PRODUCTS: None under normal temperatures and pressures. See also **SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.**

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 11: TOXICOLOGICAL INFORMATION

SENSITIZATION: Based on best current information, there may be known human sensitization associated with this product.

MUTAGENICITY: Based on best current information, there may be known mutagenicity associated with this product.

CARCINOGENICITY: Mineral oils, untreated or mildly treated are categorized by IARC as carcinogenic to humans (Group 1). Mineral oils, untreated or mildly treated are listed by NTP as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are listed by OSHA as carcinogens. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are categorized by IARC as carcinogenic to humans (Group 1), probably carcinogenic to humans (Group 2A), and/or possibly carcinogenic to humans (Group 2B). There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are classified by NTP as known carcinogens and/or as having limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals. There may be hydrocarbon and chlorinated solvents, metals, and polynuclear aromatics present in this product which are recognized by ACGIH as confirmed human carcinogens (A1) and/or suspected human carcinogens (A2).

Also see **SECTION 15: CALIFORNIA.**

REPRODUCTIVE TOXICITY: Based on best current information, there may be known reproductive toxicity associated with this product.

TERATOGENICITY: Based on best current information, there may be known teratogenicity associated with this product.

TOXICOLOGICALLY SYNERGISTIC PRODUCT(S): Based on best current information, there may be known toxicologically synergistic products associated with this product.

FUEL OIL
MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY: Components of this product may be harmful to aquatic life.

**OCTANOL/WATER
PARTITION COEFFICIENT:** Not available.

**VOLATILE ORGANIC
COMPOUNDS:** 56 WT%; <500 g/L (calculated)
As per 40 CFR Part 51.100(s).

SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

**USEPA WASTE
CODE(S):** Based on available data, this information applies to the product as supplied to the user. Processing, use, or contamination by the user may change the waste code applicable to the disposal of this product.

SECTION 14: TRANSPORT INFORMATION

DOT: **Shipping Name:** Combustible Liquid, n.o.s (Petroleum Oil)
UN/NA #: NA1993 **Hazard Class:** Combustible Liquid **Packing Group:** III
Required Label(s): None
Additional Info.: Non-bulk packages may be reclassified as Not Regulated.

TDG: **Shipping Name:** Not regulated as a Dangerous Good.

**EMERGENCY RESPONSE
GUIDE NUMBER:** 128
Reference *North American Emergency Response Guidebook*

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SECTION 15: REGULATORY INFORMATION

USA REGULATIONS

SARA SECTIONS 302 AND 304: Based on the ingredients listed in **SECTION 2**, this product does may contain" extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA SECTIONS 311 AND 312: This product poses the following health hazards as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):
Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard
Fire Hazard

SARA SECTION 313: This product may contain "toxic" chemicals subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

CERCLA: Based on the ingredients listed in **SECTION 2**, this product may contain any "hazardous substances" listed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4.

TSCA: Not available.

CALIFORNIA: This product is not for sale or use in the State of California.

CANADIAN REGULATIONS

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all information required by the CPR.

WHMIS:
Class B3 - Combustible Liquid
Class D2A - Chronic toxic effects.
Class D2B - Irritating to eyes and skin.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): Not available.

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MATERIAL SAFETY DATA SHEET FOR USA AND CANADA

SECTION 16. OTHER INFORMATION

REVISION INFORMATION: Regulatory update. Updated in Sections 1 (Dates), 3 (Emergency Overview), 4 (Phone Numbers), 8 (Personal Protective Equipment), 12 (Ecotoxicity Information), 13 (Disposal Considerations), 16 (Revision Information).

LABEL/OTHER INFORMATION: Not available.

User assumes all risks incident to the use of this (these) product(s). To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, or merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product(s) as supplied to the user.



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MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Petersburg Oil Terminal

Refinery's identification: Novokuybyshevsk refinery, Syzran refinery, Orsk refinery, Salavat refinery, Moscow refinery, Nizhnekamsk refinery, Norski refinery, Perm refinery, Samara refinery.

Product Name: Fuel Oil No. 6

(Straight Run Atmospheric Residual Oil) Last Revision: 03/22/00

MSDS Number: A0007b.msdl

Date Prepared: 09/01/06

Synonyms: M100, M40, E-4

Product Description: A complex mixture of paraffinic, olefinic, naphthenic and aromatic hydrocarbons.

2. COMPOSITION & INFORMATION ON INGREDIENTS

Occupational Exposure Limits*

OSHA ACGIH

Product	CAS No.	Wt%	PEL	TLV	Other Units
Fuel Oil No. 6	68333-00-4	100	N/A	N/A	(Straight Run Atmospheric Residual Oil)

Component(s)

Hydrogen Sulfide	7783-06-4	0-0.04	10	10	15 STEL	ppm
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CAUTION! Under certain circumstances sulfur compounds in hot product may form hydrogen sulfide (H₂S). Cooling product may continue to emit traces of H₂S temporarily entrapped or other dissolved gases.

Key: * = 8-Hr. TWA unless otherwise specified
STEL = Short Term Exposure Limit; 15 minutes.
N/A = Not Applicable

3. HAZARD IDENTIFICATION

Note: This product has not been tested by El Paso Corporation to determine its specific health hazards. Therefore, the information provided in this section includes health hazard information on the product components.

Carcinogenicity: NTP IARC Monographs OSHA Regulated

Fuel Oil No. 6	No	2B*	No
Hydrogen Sulfide	No	No	No

5, MEZHEVOY CANAL, ST. PETERSBURG 198035, RUSSIA tel. + 7(812) 329 29 99 fax + 7(812) 329 29 89 e-mail: pnt@mail.wplus.net www.oilterminal.ru



"2B*" = This product mixture (heavy residual fuel oils) has been classified by IARC as "possibly carcinogenic to humans".

Potential Health Effects From Overexposure:

Acute Effects:

- Eyes:** Slight to moderate eye irritation.
- Skin:** Moderately irritating; causing redness, drying and cracking of skin.
- Inhalation:** Inhalation can be irritating to the mucous membrane and respiratory tract. May produce symptoms of intoxication such as; headache, dizziness, nausea, vomiting, loss of coordination. Hydrogen sulfide can cause headache, dizziness, respiratory paralysis, unconsciousness and/or death.
- Ingestion:** Ingestion may cause gastrointestinal disturbances such as nausea, vomiting and diarrhea.

Chronic Effects:

Prolonged and repeated skin contact may cause dermatitis.

Additional Medical and Toxicological Information:

May aggravate pre-existing dermatitis. This product contains polynuclear aromatics, which have caused carcinogenic effects in laboratory animals.

4. FIRST AID MEASURES

- Eye Contact:** Immediately flush with large amounts of water for at least 15 minutes, including under the eyelids. Contact a physician immediately, preferably an ophthalmologist. Speed and thoroughness in rinsing eyes are important to avoid permanent injury.
- Skin Contact:** Cool the exposed area immediately. Remove contaminated clothing. Wash affected areas with soap and water, get medical attention.
- Inhalation:** Remove to fresh air. If breathing has stopped, apply artificial respiration. Seek medical attention.
- Ingestion:** Do not induce vomiting. If spontaneous vomiting occurs, hold the victim's head lower than their hips to prevent aspiration.



5. FIRE FIGHTING MEASURES

Flash Point: >150°F

Flammable Limits in Air, % by Volume:

Lower: N/A

Upper: N/A

Autoignition Temperature: N/A

Extinguishing Media: Dry chemical, foam, carbon dioxide, and water spray.

NFPA Ratings: Health: 0

Flammability: 2

Reactivity: 0

General Hazard:

Flowing oil can be ignited by self-generated static electricity; check for combustible vapors prior to and during welding and torch cutting on tanks and vessels.

Fire Fighting Instructions:

Use a water spray to cool fire-exposed containers. Use a smothering technique for extinguishing fire of this combustible liquid. Do not use a force water stream directly on oil fires as this will tend to scatter the fire. Firefighters should wear self-contained breathing apparatus and full protective clothing.

6. ACCIDENTAL RELEASE

Remove source of heat or ignition including internal combustion engines and power tools. Clean up spill, but do not flush to sewers or surface water. Ventilate area and avoid breathing.

7. HANDLING & STORAGE

Store away from incompatible materials. Ground and bond all transfer and storage equipment to prevent static sparks and equip with self-closing valves, pressure vacuum bungs and flame arrestors. Empty containers may contain residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind or expose such containers to heat, flame sparks or other sources of ignition; they may explode and cause injury or death.

Additional Storage Warning: Hydrogen sulfide and other relatively low flash point substances may accumulate in vapor spaces of fuel oil tanks and bulk transport compartments. This not only poses an additional physical hazard (e.g., flammability) but also a potentially serious health hazard as well, due to the toxicity of hydrogen sulfide.

8. EXPOSURE CONTROL, PERSONAL PROTECTION

Eye Protection: Remove contact lenses and wear chemical safety glasses or goggles where contact with liquid or mist may occur.

Skin Protection: Wear impervious gloves when contact with skin may occur. Launder contaminated clothing prior to reuse. Wash with soap and water before eating, drinking or smoking.

Inhalation: Use approved respiratory protective equipment for cleaning large spills or entry into tanks, vessels or other confined spaces.

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P E T E R S B U R G
OIL TERMINAL

Ventilation:

Provide adequate general and local ventilation: (1) to maintain airborne chemical concentrations below applicable exposure limits, (2) to prevent accumulation of flammable vapors and formation of explosive atmospheres, and (3) to prevent formation of oxygen deficient atmospheres, especially in confined spaces. [Note: this product may release gases or vapors that can displace oxygen in enclosed areas.]

9. PHYSICAL & CHEMICAL PROPERTIES

See certificate of quality №456 dd 09/30/06

Odor: Mild petroleum

Appearance: Black viscous liquid

10. STABILITY & REACTIVITY

Stability: Stable under normal conditions of use.

Hazardous Polymerization: Will not occur.

Conditions to Avoid/Incompatibilities: Strong oxidizing agents, heat, sparks, flame and build up of static electricity.

Hazardous Decomposition Products: CO, CO₂, SO₂, H₂S, and reactive hydrocarbons.

11. TOXICOLOGICAL INFORMATION

No data available.

12. ECOLOGICAL INFORMATION

No data available.



P E T E R S B U R G
OIL TERMINAL

13. DISPOSAL INFORMATION

Dispose through a licensed waste disposal company. Follow applicable federal, state and local disposal regulations.

14. TRANSPORT INFORMATION

Fuel Oil, 3, NA 1993, Packing Group III.

15. REGULATORY INFORMATION

EPA SARA TITLE III

Section 302 EPCRA Extremely Hazardous Substances (EHS)

Product Component	CAS No.	Wt%	RQ, lb	TPQ, lb
Hydrogen Sulfide	7783-00-4	0-0.04	100	500

Section 304 CERCLA Hazardous Substances

Product Component	CAS No.	Wt%	RQ, lb
Hydrogen Sulfide	7783-00-4	0-0.04	100

Section 311/312 Hazard Categorization

Acute: Chronic: Fire: Pressure: Reactive:
X X X

Section 313 EPCRA Toxic Substances

Product Component	CAS No.	Wt. %
Hydrogen Sulfide	7783-00-4	0-0.04

Key: RQ = Reportable Quantity
TPQ = Threshold Planning Quantity of EHS

16. OTHER INFORMATION

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR THEIR OWN PARTICULAR USE.

This is the end of MSDS A0007b.msdl

P-481

IMTT EH&S Product Review Form

Information to be provided with MSDS by Traffic

Tank Number 694 / 695 (ATLANTIC TRADENE)Product Name FUEL OIL # 6

System 36 product group _____

Heated product: Yes or No (circle one)

- if different than ~130 F, state average temperature and range: _____

Chemical Information

Vapor Pressure: NOT INDICATEDFlash Point: > 150°FIncompatible chemicals: OXIDIZING AGENTS, HEAT, SPARKS, FLAMES & STATICList HAP/TAP and weight percentage in liquid: H₂S 0 - 0.04

Environmental Regulatory Concerns

SPCC diking adequate: Yes No, Possible (circle one)Expected to be hazardous waste (all petroleum liquids are tested before disposal): Yes, No (circle one)Addressed in water permit: Yes No, Possible (circle one)Addressed in air permit: Yes No, Possible (circle one)Fugitive emission monitoring: Yes or No (circle one)Date MSDS Issued: 09/01/06

Health and Safety

Personal Protective Equipment Requirements: (circle all that apply, add additional if necessary)

Safety Glasses

Goggles

Faceshield

Apron

Chemical Suit

Chemical Gloves

Boots

H₂S Monitor

Comments

ENSURE CPR / STATEMENT IS USED TO INDICATE
HAPS / TAPS / VP IS WITHIN PERMITTED LIMITS

Terminal Approval

☒ St. RoseSignature: DJ [Signature]Date: 4/17/07☒ AvondaleSignature: Randy [Signature]Date: 4/23/07☒ GretnaSignature: Vandy [Signature]Date: 4/25/07

Product Name: GASOLINE, UNLEADED AUTOMOTIVE
Revision Date: 29Jun2007
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MATERIAL SAFETY DATA SHEET

SECTION 1

PRODUCT AND COMPANY IDENTIFICATION

PRODUCT

Product Name: GASOLINE, UNLEADED AUTOMOTIVE

Product Description: Hydrocarbons and Additives

Product Code: 123455-20, 9700, 977032, 977217, 977306, 977360, 977371, 977381, 977445, 977562, 977767, 977920, 979533, 97A039, 97A065, 97A078, 97A087, 97A102, 97A108, 97A146, 97A147, 97A152, 97A193, 97A200, 97A240, 97A266, 97A273, 97A290, 97A305, 97A316, 97A317, 97A328, 97A347, 97A380, 97A404, 97A424, 97A431, 97A441, 97A514, 97A556, 97A557, 97A613, 97A634, 97A653, 97A655, 97A659, 97A686, 97A696, 97A703, 97A712, 97A726, 97A736, 97A746, 97A767, 97A794, 97A798, 97A827, 97A848, 97A851, 97A876, 97A883, 97A907, 97A934, 97A948, 97A949, 97A960, 97A983, 97A989, 97AW38, 97C070, 97C072, 97C075, 97C110, 97C112, 97C113, 97C118, 97C127, 97C140, 97C148, 97C166, 97C417, 97C558, 97C576, 97C632, 97C702, 97C731, 97C759, 97C770, 97C782, 97C794, 97C870, 97C917, 97D130, 97D228, 97E002, 97E010, 97E041, 97E065, 97E087, 97E103, 97E104, 97E11, 97E112, 97E113, 97E170, 97E171, 97E196, 97E197, 97E259, 97E260, 97E304, 97E305, 97E347, 97E42, 97E532, 97E564, 97E581, 97E595, 97E606, 97E611, 97E619, 97E649, 97E655, 97E66, 97E682, 97E749, 97E860, 97E88, 97E999, 97F005, 97F020, 97F030, 97F054, 97F312, 97F344, 97F952, 97M190, 97M191, 97M192, 97M193, 97M194, 97M195, 97M229, 97M230, 97M232, 97N832, 97N844, 97N861, 97N873, 97N879, 97N891, 97N895, 97N917, 97N921, 97N954, 97Q303, 97Q763, 97Q781, 97Q782, 97R368, 97S760, 97X861, EMGF20

Intended Use: Fuel, Gasoline

COMPANY IDENTIFICATION

Supplier:

EXXON MOBIL CORPORATION

3225 GALLOWES RD.
FAIRFAX, VA. 22037 USA

24 Hour Health Emergency

609-737-4411

Transportation Emergency Phone

800-424-9300

ExxonMobil Transportation No.

281-834-3296

MSDS Requests

713-613-3661

Product Technical Information

800-662-4525, 800-947-9147

MSDS Internet Address

<http://www.exxon.com>, <http://www.mobil.com>

SECTION 2

COMPOSITION / INFORMATION ON INGREDIENTS

Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
ETHYL ALCOHOL	64-17-5	< 11%
GASOLINE	86290-81-5	89 - 100%

Hazardous Constituent(s) Contained in Complex Substance(s)

Name	CAS#	Concentration*
BENZENE	71-43-2	0.1 - 5%
ETHYL BENZENE	100-41-4	1 - 5%
N-HEXANE	110-54-3	1 - 5%
NAPHTHALENE	91-20-3	<1%
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%
TOLUENE	108-88-3	5 - 10%

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TRIMETHYL BENZENE	25551-13-7	1 - 5%
XYLENES	1330-20-7	5 - 10%

* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

NOTE: The concentration of the components shown above may vary substantially. In certain countries, benzene content may be limited to lower levels. Oxygenates such as tertiary-amyl-methyl ether, ethanol, di-isopropyl ether, and ethyl-tertiary-butyl ether may be present. Because of volatility considerations, gasoline vapor may have concentrations of components very different from those of liquid gasoline. The major components of gasoline vapor are: butane, isobutane, pentane, and isopentane. The reportable component percentages, shown in the composition/information on ingredients section, are based on API's evaluation of a typical gasoline mixture.

SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

POTENTIAL PHYSICAL / CHEMICAL EFFECTS

Extremely flammable. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited. Material can accumulate static charges which may cause an incendiary electrical discharge.

POTENTIAL HEALTH EFFECTS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. May be irritating to the eyes, nose, throat, and lungs. May cause central nervous system depression. High-pressure injection under skin may cause serious damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

Target Organs: Lung | Skin |

ENVIRONMENTAL HAZARDS

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

NFPA Hazard ID:	Health: 1	Flammability: 3	Reactivity: 0
HMIS Hazard ID:	Health: 1*	Flammability: 3	Reactivity: 0

NOTE: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

SECTION 4 FIRST AID MEASURES

INHALATION

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

SKIN CONTACT

Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing

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before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

EYE CONTACT

Flush thoroughly with water. If irritation occurs, get medical assistance.

INGESTION

Seek immediate medical attention. Do not induce vomiting.

NOTE TO PHYSICIAN

If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately.

PRE-EXISTING MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE

Benzene- Individuals with liver disease may be more susceptible to toxic effects.

SECTION 5

FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

Appropriate Extinguishing Media: Use water fog, foam, dry chemical or carbon dioxide (CO2) to extinguish flames.

Inappropriate Extinguishing Media: Straight Streams of Water

FIRE FIGHTING

Fire Fighting Instructions: Evacuate area. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. Firefighters should use standard protective equipment and in enclosed spaces, self-contained breathing apparatus (SCBA). Use water spray to cool fire exposed surfaces and to protect personnel.

Unusual Fire Hazards: Extremely Flammable. Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

Hazardous Combustion Products: Smoke, Fume, Sulfur oxides, Aldehydes, Oxides of carbon, Incomplete combustion products

FLAMMABILITY PROPERTIES

Flash Point [Method]: <-40C (-40F) [ASTM D-56]

Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6

Autoignition Temperature: >250°C (482°F)

SECTION 6

ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

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PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for Personal Protective Equipment.

SPILL MANAGEMENT

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. All equipment used when handling the product must be grounded. Do not touch or walk through spilled material. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Use clean non-sparking tools to collect absorbed material. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Large Spills: Water spray may reduce vapor; but may not prevent ignition in closed spaces. Recover by pumping or with suitable absorbent.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

ENVIRONMENTAL PRECAUTIONS

Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

SECTION 7

HANDLING AND STORAGE

HANDLING

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures. Do not use as a cleaning solvent or other non-motor fuel uses. For use as a motor fuel only. It is dangerous and/or unlawful to put fuel into unapproved containers. Do not fill container while it is in or on a vehicle. Static electricity may ignite vapors and cause fire. Place container on ground when filling and keep nozzle in contact with container. Do not use electronic devices (including but not limited to cellular phones, computers, calculators, pagers or other electronic devices, etc.) in or around any fueling operation or storage area unless the devices are certified intrinsically safe by an approved national testing agency and to the safety standards required by national and/or local laws and regulations. Prevent small spills and leakage to avoid slip hazard. Material can accumulate static charges which may cause an electrical spark (ignition source).

Static Accumulator: This material is a static accumulator.

STORAGE

Ample fire water supply should be available. A fixed sprinkler/deluge system is recommended. Keep container closed. Handle containers with care. Open slowly in order to control possible pressure release. Store in a cool, well-ventilated area. Outside or detached storage preferred. Storage containers should be grounded and

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bonded. Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters.

SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			Note	Source
BENZENE		OSHA Action level	0.5 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm		N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm		N/A	OSHA

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SECTION 8

EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE LIMIT VALUES

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Source	Form	Limit / Standard			Note	Source
BENZENE		OSHA Action level	0.5 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	5 ppm		N/A	OSHA Sp.Reg.
BENZENE		TWA	1 ppm		N/A	OSHA Sp.Reg.
BENZENE		STEL	2.5 ppm		Skin	ACGIH
BENZENE		TWA	0.5 ppm		Skin	ACGIH
ETHYL ALCOHOL		TWA	1900 mg/m3	1000 ppm	N/A	OSHA Z1
ETHYL ALCOHOL		TWA	1000 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
ETHYL BENZENE		STEL	125 ppm		N/A	ACGIH
ETHYL BENZENE		TWA	100 ppm		N/A	ACGIH
GASOLINE	Vapor.	TWA	300 mg/m3	100 ppm	N/A	ExxonMobil
GASOLINE		STEL	500 ppm		N/A	ACGIH
GASOLINE		TWA	300 ppm		N/A	ACGIH
N-HEXANE		TWA	1800 mg/m3	500 ppm	N/A	OSHA Z1
N-HEXANE		TWA	50 ppm		Skin	ACGIH
NAPHTHALENE		TWA	50 mg/m3	10 ppm	N/A	OSHA Z1
NAPHTHALENE		STEL	15 ppm		Skin	ACGIH
NAPHTHALENE		TWA	10 ppm		Skin	ACGIH
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)		TWA	25 ppm		N/A	ACGIH
TOLUENE		Ceiling	300 ppm		N/A	OSHA Z2
TOLUENE		Maximum concentration	500 ppm		N/A	OSHA Z2
TOLUENE		TWA	200 ppm		N/A	OSHA Z2
TRIMETHYL BENZENE		TWA	25 ppm		N/A	ACGIH
XYLENES		TWA	435 mg/m3	100 ppm	N/A	OSHA Z1
XYLENES		STEL	150 ppm		N/A	ACGIH
XYLENES		TWA	100 ppm		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

ENGINEERING CONTROLS

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The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

Use explosion-proof ventilation equipment to stay below exposure limits.

PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

Respiratory Protection: If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No special requirements under ordinary conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

Hand Protection: Any specific glove information provided is based on published literature and glove manufacturer data. Work conditions can greatly affect glove durability; inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

Eye Protection: If contact is likely, safety glasses with side shields are recommended.

Skin and Body Protection: Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Specific Hygiene Measures: Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

SECTION 9

PHYSICAL AND CHEMICAL PROPERTIES

Typical physical and chemical properties are given below. Consult the Supplier in Section 1 for additional data.

GENERAL INFORMATION

Physical State: Liquid

Color: Clear (May Be Dyed)

Odor: Petroleum/Solvent

Odor Threshold: N/D

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IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

Relative Density (at 15 C): 0.74
 Flash Point [Method]: <-40C (-40F) [ASTM D-56]
 Flammable Limits (Approximate volume % in air): LEL: 1.4 UEL: 7.6
 Autoignition Temperature: >250°C (482°F)
 Boiling Point / Range: >20C (68F)
 Vapor Density (Air = 1): 3 at 101 kPa
 Vapor Pressure: >26.6 kPa (200 mm Hg) at 20 C
 Evaporation Rate (n-butyl acetate = 1): >10
 pH: N/A
 Log Pow (n-Octanol/Water Partition Coefficient): >3
 Solubility in Water: Negligible
 Viscosity: <1 cSt (1 mm²/sec) at 40 C
 Oxidizing Properties: See Sections 3, 15, 16.

OTHER INFORMATION

Freezing Point: N/D
 Melting Point: N/A

SECTION 10 STABILITY AND REACTIVITY

STABILITY: Material is stable under normal conditions.

CONDITIONS TO AVOID: Avoid heat, sparks, open flames and other ignition sources.

MATERIALS TO AVOID: Halogens, Strong Acids, Alkalies, Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Material does not decompose at ambient temperatures.

HAZARDOUS POLYMERIZATION: Will not occur.

SECTION 11 TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Route of Exposure	Conclusion / Remarks
Inhalation	
Toxicity (Rat): LC50 > 5000 mg/m ³	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs. Based on assessment of the components.
Ingestion	
Toxicity (Rat): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Skin	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: No end point data.	Moderately irritating to skin with prolonged exposure. Based on test data for structurally similar materials.
Eye	

Product Name: GASOLINE, UNLEADED AUTOMOTIVE

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Irritation: Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.
-----------------------------	----------------------------------------------------------------------------------------------------------

CHRONIC/OTHER EFFECTS

For the product itself:

Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U.S. EPA determined that the male rat kidney is not useful for assessing human risk.

Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing).

Contains:

BENZENE: Caused cancer (leukemia), damage to the blood-producing system, and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies. **ETHANOL:** Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring.

NAPHTHALENE: Exposure to high concentrations of naphthalene may cause destruction of red blood cells, anemia, and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings to humans is uncertain. **N-HEXANE:** Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

TRIMETHYLBENZENE: Long-term inhalation exposure of trimethylbenzene caused effects to the blood in laboratory animals.

ETHYLBENZENE: Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 3, 6
ETHYL BENZENE	100-41-4	5

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GASOLINE	86290-81-5	5
NAPHTHALENE	91-20-3	2, 5

--REGULATORY LISTS SEARCHED--

1 = NTP CARC
2 = NTP SUS

3 = IARC 1
4 = IARC 2A

5 = IARC 2B
6 = OSHA CARC

SECTION 12 ECOLOGICAL INFORMATION

The information given is based on data available for the material, the components of the material, and similar materials.

ECOTOXICITY

Material -- Expected to be toxic to aquatic organisms. May cause long-term adverse effects in the aquatic environment.

MOBILITY

More volatile component -- Highly volatile, will partition rapidly to air. Not expected to partition to sediment and wastewater solids.

Less volatile component -- Low solubility and floats and is expected to migrate from water to the land. Expected to partition to sediment and wastewater solids.

PERSISTENCE AND DEGRADABILITY

Biodegradation:

Majority of components -- Expected to be inherently biodegradable

Atmospheric Oxidation:

More volatile component -- Expected to degrade rapidly in air

BIOACCUMULATION POTENTIAL

Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

DISPOSAL RECOMMENDATIONS

Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

REGULATORY DISPOSAL INFORMATION

RCRA Information: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP). Potential RCRA characteristics: IGNITABILITY. TCLP (BENZENE)

Empty Container Warning Empty Container Warning (where applicable): Empty containers may contain residue and

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can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

SECTION 14 TRANSPORT INFORMATION

LAND (DOT)

Proper Shipping Name: GASOLINE
Hazard Class & Division: 3
ID Number: 1203
Packing Group: II
ERG Number: 128
Label(s): 3
Transport Document Name: UN1203, GASOLINE, 3, PG II

LAND (TDG)

Proper Shipping Name: GASOLINE
Hazard Class & Division: 3
UN Number: 1203
Packing Group: II
Special Provisions: 17

SEA (IMDG)

Proper Shipping Name: MOTOR SPIRIT or GASOLINE or PETROL
Hazard Class & Division: 3
EMS Number: F-E, S-E
UN Number: 1203
Packing Group: II
Label(s): 3
Transport Document Name: UN1203, MOTOR SPIRIT or GASOLINE or PETROL, 3, PG II, (-40°C c.c.)

AIR (IATA)

Proper Shipping Name: GASOLINE
Hazard Class & Division: 3
UN Number: 1203
Packing Group: II
Label(s): 3
Transport Document Name: UN1203, GASOLINE, 3, PG II

SECTION 15 REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

NATIONAL CHEMICAL INVENTORY LISTING: AICS, DSL, EINECS, ENCS, KECI, PICCS, TSCA

EPCRA: This material contains no extremely hazardous substances.

CERCLA: This material is not subject to any special reporting under the requirements of the Comprehensive

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Environmental Response, Compensation and Liability Act (CERCLA). Contact local authorities to determine if other reporting requirements apply.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: Fire. Immediate Health. Delayed Health.

SARA (313) TOXIC RELEASE INVENTORY:

Chemical Name	CAS Number	Typical Value
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1 - 5%
N-HEXANE	110-54-3	1 - 5%
ETHYL BENZENE	100-41-4	1 - 5%
XYLENES	1330-20-7	5 - 10%
BENZENE	71-43-2	0.1 - 5%
NAPHTHALENE	91-20-3	<1%
TOLUENE	108-88-3	5 - 10%

The Following Ingredients are Cited on the Lists Below:

Chemical Name	CAS Number	List Citations
BENZENE	71-43-2	1, 2, 4, 10, 11, 13, 15, 16, 17, 18, 19
ETHYL ALCOHOL	64-17-5	1, 4, 13, 16, 17, 18, 19
ETHYL BENZENE	100-41-4	1, 4, 10, 13, 16, 17, 18, 19
GASOLINE	86290-81-5	1, 18
N-HEXANE	110-54-3	1, 4, 13, 16, 17, 18, 19
NAPHTHALENE	91-20-3	1, 4, 5, 10
PSEUDOCUMENE (1,2,4-TRIMETHYLBENZENE)	95-63-6	1, 13, 16, 17, 18, 19
TOLUENE	108-88-3	4, 11, 13, 15, 16, 17, 18, 19
TRIMETHYL BENZENE	25551-13-7	1, 13, 16, 17, 18, 19
XYLENES	1330-20-7	1, 4, 5, 13, 15, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

SECTION 16 OTHER INFORMATION

N/D = Not determined, N/A = Not applicable

THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:

No revision information is available.

THIS MSDS COVERS THE FOLLOWING MATERIALS: ESSO EXTRA MIDGRADE UNLEADED | ESSO MIDGRADE UNLEADED | ESSO PREMIUM UNLEADED | ESSO REGULAR UNLEADED | ESSO SUPER PREMIUM UNLEADED | EXXON MIDGRADE UNLEADED | EXXON PREMIUM UNLEADED | EXXON REGULAR UNLEADED | GASOLINE | INDOLINE GASOLINE | MIDGRADE UNLEADED | MOBIL EXTRA UNLEADED |

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MOBIL REGULAR UNLEADED | MOBIL SPECIAL UNLEADED | MOBIL SUPER UNLEADED | PREMIUM UNLEADED | REGULAR UNLEADED | UNLEADED GASOLINE

PRECAUTIONARY LABEL TEXT:

Contains: BENZENE, GASOLINE

DANGER!

HEALTH HAZARDS

Irritating to skin. If swallowed, may be aspirated and cause lung damage. Prolonged and repeated exposure to benzene may cause serious injury to blood forming organs and is associated with anemia and to the later development of acute myelogenous leukemia (AML).

Target Organs: Lung | Skin |

PHYSICAL HAZARDS

Extremely flammable. Material can accumulate static charges which may cause an incendiary electrical discharge. Material can release vapors that readily form flammable mixtures. Vapor accumulation could flash and/or explode if ignited.

PRECAUTIONS

Avoid breathing mists or vapors. Avoid contact with skin. Use non-sparking tools and explosion-proof equipment. Potentially toxic/irritating fumes/vapors may be evolved from heated or agitated material. Do not siphon by mouth. Use only with adequate ventilation. Use proper bonding and/or grounding procedures.

FIRST AID

Inhalation: Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

Eye: Flush thoroughly with water. If irritation occurs, get medical assistance.

Oral: Seek immediate medical attention. Do not induce vomiting.

Skin: Wash contact areas with soap and water. Remove contaminated clothing. Launder contaminated clothing before reuse. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

FIRE FIGHTING MEDIA

Use water fog, foam, dry chemical or carbon dioxide (CO₂) to extinguish flames.

SPILL/LEAK

Land Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Prevent entry into waterways, sewer, basements or confined areas. A vapor suppressing foam may be used to reduce vapors. Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers. Recover by pumping or with suitable absorbent.

Water Spill: Eliminate all ignition sources (no smoking, flares, sparks or flames in immediate area). Stop leak if you can do it without risk. Do not confine in area of spill. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants.

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This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm are created by the combustion of this product.

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MHC: 1A, 0, 0, 0, 3, 1

PPEC: CF

DGN: 2000316XUS (1011203)

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Material Safety Data Sheet

Material Name: 44K®

MSDS ID: 208

*** Section 1 - Chemical Product and Company Identification ***

Part Number: 208, 208A, 2081, 2085, 20816, 20830, 20853

Product Use: Gasoline Additive

Manufacturer Information

BG Products Inc.
701 S. Wichita Street
Wichita, KS 67213

Phone: (316) 265-2686
Fax: (316) 265-0718
Emergency # 1-800-424-9300 (CHEMTREC)

*** Section 2 - Hazards Identification ***

Emergency Overview

WARNING:

- Combustible liquid. Do not use or store near flames, sparks, or hot surfaces.
- This product is irritating to the eyes and skin.
- This product may be harmful by inhalation.
- This product may be harmful if it is swallowed.

HMIS Ratings: Health: 1 Fire: 2 Physical Hazard: 0 Pers. Prot.: B

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

*** Section 3 - Composition / Information on Ingredients ***

CAS #	Component	Percent
Mixture	Petroleum distillates	40-70
8052-41-3	Mineral spirits	20-25

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following:
Naphtha (petroleum), hydrotreated heavy, Petroleum distillates, hydrotreated light, Petroleum naphtha, light aromatic.

Component Information

This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication). This product is considered a controlled product under the Canadian Controlled Products Regulations (CPR).

*** Section 4 - First Aid Measures ***

First Aid: Eyes

In case of contact, immediately flush eyes with large amounts of water, continuing to flush for 15 minutes. If irritation persists get medical attention.

First Aid: Skin

For skin contact flush with large amounts of water while removing contaminated clothing. If irritation persists, get medical attention.

First Aid: Ingestion

If ingested, get immediate medical attention. Do not induce vomiting unless instructed to do so by medical personnel.

First Aid: Inhalation

Move person to non-contaminated air. Give artificial respiration if not breathing. Call a physician if symptoms develop or persist.



Material Safety Data Sheet

Material Name: 44K®

MSDS ID: 208

*** Section 5 - Fire Fighting Measures ***

General Fire Hazards

See Section 9 for Flammability Properties.
Keep away from heat, sparks, or open flame.

Hazardous Combustion Products

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Extinguishing Media

Dry chemical, foam, carbon dioxide.

Fire Fighting Equipment/Instructions

Fire fighters should wear full-face, self contained breathing apparatus and impervious protective clothing.
Fire fighters should avoid inhaling any combustion products.

NFPA Ratings: Health: 1 Fire: 2 Reactivity: 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

*** Section 6 - Accidental Release Measures ***

Containment Procedures

Contain the discharged material. Remove sources of ignition.

Clean-Up Procedures

Wear appropriate protective equipment and clothing during clean-up. Absorb spill with inert material.
Shovel material into appropriate container for disposal.

Evacuation Procedures

Isolate area. Keep unnecessary personnel away. In case of large spills, follow all facility emergency response procedures.

Special Procedures

Wear appropriate personal protective equipment.

*** Section 7 - Handling and Storage ***

Handling Procedures

Avoid getting this material into contact with your skin and eyes. Wash thoroughly after handling. Use this product with adequate ventilation. Keep container closed.

Storage Procedures

Do not store this material in open or unlabeled containers. Store this product in air-tight containers away from sources of heat and light.

*** Section 8 - Exposure Controls / Personal Protection ***

A: Component Exposure Limits

Mineral spirits (8052-41-3)

ACGIH: 100 ppm TWA
OSHA: 100 ppm TWA; 525 mg/m³ TWA
NIOSH: 350 mg/m³ TWA
1800 mg/m³ Ceiling (15 min)



Material Safety Data Sheet

Material Name: 44K®

MSDS ID: 208

B: Canadian Provincial Exposure Limits

Petroleum distillates (Mixture)

British: 200 mg/m³ TWA (as total hydrocarbon vapour) (related to Jet fuels)
Columbia: Skin notation (related to Jet fuels)

Mineral spirits (8052-41-3)

Alberta: 100 ppm TWA; 572 mg/m³ TWA
British: 290 mg/m³ TWA
Columbia: 580 mg/m³ STEL
Manitoba: 100 ppm TWA; 525 mg/m³ TWA
New Brunswick: 100 ppm TWA; 525 mg/m³ TWA
NW Territories: 100 ppm TWA; 575 mg/m³ TWA
125 ppm STEL; 720 mg/m³ STEL
Nova Scotia: 100 ppm TWA
Nunavut: 100 ppm TWA; 575 mg/m³ TWA
125 ppm STEL; 720 mg/m³ STEL
Ontario: 525 mg/m³ TWAEV
Quebec: 100 ppm TWAEV; 525 mg/m³ TWAEV
Saskatchewan: 525 mg/m³ TWA; 100 ppm TWA
656 mg/m³ STEL; 125 ppm STEL
Yukon: 100 ppm TWA; 575 mg/m³ TWA
150 ppm STEL; 720 mg/m³ STEL

Engineering Controls

Provide adequate local exhaust ventilation to maintain worker exposure below exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Personal Protective Equipment: Eyes/Face

Wear safety glasses; chemical goggles (if splashing is possible).

Personal Protective Equipment: Skin

Use appropriate hand protection.

Personal Protective Equipment: Respiratory

Use NIOSH approved respirator with cartridge, air line, or SCBA as appropriate based on workplace exposure evaluations.

Personal Protective Equipment: General

Use good industrial hygiene practices in handling this material.

*** Section 9 - Physical & Chemical Properties ***

Appearance:	Light yellow liquid	Odor:	Solvent
Physical State:	Liquid	Flash Point:	43°C (110°F)
Flash Point Method:	PMCC	Boiling Point:	156°C (312°F)
Melting Point:	Not Determined	Pour Point:	<-48°C (-55°F)
Specific Gravity:	0.8533	Bulk Density:	7.114 lbs/gal
Solubility (H₂O):	Insoluble	Vapor Pressure:	Not Available
Vapor Density:	Not Available	Auto Ignition:	Not Available
Lower Flammability Limit:	Not Available	Upper Flammability Limit:	Not Available
pH:	Not Available		

*** Section 10 - Chemical Stability & Reactivity Information ***

Chemical Stability

Stable under normal conditions.



Material Safety Data Sheet

Material Name: 44K®

MSDS ID: 208

Chemical Stability: Conditions to Avoid

Keep away from heat, ignition sources and incompatible materials. Avoid strong oxidizing agents.

Incompatibility

This product may react with oxidizing agents. Strong oxidizing agents (peroxides, chlorine, strong acids).

Hazardous Decomposition

Upon decomposition, this product emits carbon monoxide, carbon dioxide and/or low molecular weight hydrocarbons.

Possibility of Hazardous Reactions

Will not occur.

*** Section 11 - Toxicological Information ***

Acute Dose Effects

A: General Product Information

An LD50 value for this product has not been determined.

B: Component Analysis - LD50/LC50

Petroleum distillates (Mixture)

Oral LD50 Rat: >5000 mg/kg; Dermal LD50 Rabbit: >3160 mg/kg (related to Naphtha (petroleum), hydrotreated heavy)

Carcinogenicity

A: General Product Information

No carcinogenicity data available for this product.

B: Component Carcinogenicity

None of this product's components are listed by ACGIH, IARC, OSHA, NIOSH, or NTP.

*** Section 12 - Ecological Information ***

Ecotoxicity

No information available for the product.

*** Section 13 - Disposal Considerations ***

Waste Disposal Instructions

Dispose of in accordance with all applicable Federal, State, Provincial, and local regulations.

*** Section 14 - Transportation Information ***

US DOT Information

Shipping Name: Petroleum Lubricating Oil, Not Regulated

IMDG Information

Shipping Name: Flammable Liquid, n.o.s. (contains Mineral Spirits and Petroleum Distillates)

UN #: 1993 Hazard Class: 3 Packing Group: III Flash Point: 43°C

Required Label(s): Flammable; Limited Quantity if less than or equal to 5L

IATA Information

Shipping Name: Flammable Liquid, n.o.s. (contains Mineral Spirits and Petroleum Distillates)

UN #: 1993 Hazard Class: 3 Packing Group: III Flash Point: 43°C

Required Label(s): Flammable; Limited Quantity if less than or equal to 5L



Material Safety Data Sheet

Material Name: 44K®

MSDS ID: 208

*** Section 15 - Regulatory Information ***

US Federal Regulations

Components of this product have been checked against the non-confidential TSCA inventory by CAS Registry Number. Components not identified on this non-confidential inventory are exempt from listing (i.e. as polymers) or are listed on the confidential inventory as declared by the supplier.

A: Component Analysis

None of this products components are listed under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4).

B: Component Analysis - Inventory

Component	CAS #	TSCA	CAN	EEC
Mineral spirits	8052-41-3	Yes	DSL	EINECS

State Regulations

Other state regulations may apply. Check individual state requirements.

Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA	RI
Mineral spirits	8052-41-3	Yes	Yes	Yes	Yes	Yes	Yes

Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Mineral spirits	8052-41-3	1 %

*** Section 16 - Other Information ***

Other Information

We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind, express or implied, and we assume no responsibility for any loss, damage, or expense, direct or consequential, arising out of their use. You must notify each person to whom this mixture or trade name product is sold. This statement must not be detached. Any copy or redistribution of the Material Safety Data Sheet shall include this statement.

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; CAS = Chemical Abstract Services; CERCLA = Comprehensive Environmental Response, Compensation, and Liability Act; CFR = Code of Federal Regulations; CPR = Controlled Product Regulations; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EPA = Environmental Protection Agency; HMIS = Hazardous Materials Information System; IARC = International Agency for Research on Cancer; IATA = International Air Transport Association; IDL = Ingredient Disclosure List; IMDG = International Maritime Dangerous Goods; LC50 = Lethal Concentration 50%; LD50 = Lethal Dose 50%; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Agency; NIOSH = National Institute for Occupational Safety and Health; NTP = National Toxicology Program; OSHA = Occupational Safety and Health Administration; SARA = Superfund Amendments and Reauthorization Act; SCBA = Self Contained Breathing Apparatus; TSCA = Toxic Substance Control Act; WHMIS = Workplace Hazardous Materials Information System.

End of MSDS 208

Material Safety Data Sheet

Gluconic acid, zinc salt hydrate

ACC# 15782

Section 1 - Chemical Product and Company Identification

MSDS Name: Gluconic acid, zinc salt hydrate

Catalog Numbers: AC392010000

Synonyms: Zinc gluconate hydrate

Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01

For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
Not available	Gluconic acid, zinc salt hydrate		unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Not available. Appearance: white powder.

Not available.

Target Organs: None known.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation. May be harmful if absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. May be harmful if swallowed.

Inhalation: May cause respiratory tract irritation. May be harmful if inhaled.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Get medical aid. Wash mouth out with water.

Inhalation: Remove from exposure and move to fresh air immediately. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or chemical foam.

Flash Point: Not available.

Autoignition Temperature: > 155 deg C (> 311.00 deg F)

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: Not published.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Avoid breathing dust, mist, or vapor. Avoid contact with skin and eyes. Avoid ingestion and inhalation.

Storage: Store in a cool, dry place. Store in a tightly closed container.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Gluconic acid, zinc salt hydrate	none listed	none listed	none listed
Zinc, bis(D-gluconato-O1,O2)-	none listed	none listed	none listed

OSHA Vacated PELs: Gluconic acid, zinc salt hydrate: No OSHA Vacated PELs are listed for this chemical. Zinc, bis(D-gluconato-O1,O2)-: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Powder

Appearance: white

Odor: odorless

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: Not available.

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: 100 g/l (20°C)

Specific Gravity/Density: Not available.

Molecular Formula: C₁₂H₂₂O₁₄Zn.xH₂O

Molecular Weight: 455.68

Section 10 - Stability and Reactivity

Chemical Stability: Not available.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS# :

CAS# 4468-02-4: ZH3750000

LD50/LC50:

CAS# 4468-02-4:

Oral, mouse: LD50 = 1290 mg/kg;

Mutagenicity:

CAS# 4468-02-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information available.
Physical: No information available.
Other: Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:		No information available.
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

Gluconic acid, zinc salt hydrate is not listed on the TSCA inventory. It is for research and development use only.

CAS# 4468-02-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 4468-02-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

Not available.

Risk Phrases:**Safety Phrases:**

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 4468-02-4: 0

Canada - DSL/NDSL

CAS# 4468-02-4 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List**Section 16 - Additional Information**

MSDS Creation Date: 2/08/2007

Revision #0 Date: Original.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of

the possibility of such damages.



SAFETY DATA SHEET

1. Identification of the substance/preparation and of the company/undertaking

Identification of the product

Catalogue No: 66178

ID No.: 6617800

Product name: **Ethyl n-butyrate**

Manufacturer/supplier identification

Company: VWR International Ltd, Merck House, Poole, Dorset, BH15 1TD, England
Telephone : 01202 669700 Telefax : 01202 665599

Emergency telephone No.: 01202 669700

2. Composition/information on ingredients

Chemical characterization

Organic liquid

Product name: Ethyl n-butyrate

CAS number: 105-54-4

EC-No.:

3. Hazards identification

Flammable.

4. First aid measures

Eye contact: Irrigate thoroughly with water. If discomfort persists obtain medical attention.

Inhalation: Remove from exposure.

Skin contact: Wash off thoroughly with soap and water.

Ingestion: Wash out mouth thoroughly with water. In severe cases obtain medical attention.

5. Fire-fighting measures

Special risks:

Flammable.

Suitable extinguishing media:

Water spray, foam, dry powder or carbon dioxide

6. Accidental release measures

Shut off all sources of ignition. Wear appropriate protective clothing.

Absorb on an inert absorbent, (e.g. BDH Spillage absorption granules), transfer to a suitable container and arrange removal by disposal company. Wash site of spillage thoroughly with water and detergent.

For large spillages liquids should be contained with sand or earth and both liquids and solids transferred to salvage containers. Any residues should be treated as for small spillages.

7. Handling and storage

Handling:

Storage:

Store at room temperature (15 to 25°C recommended). Keep well closed and protected from direct sunlight and moisture.

8. Exposure controls/personal protection

As appropriate to the situation and the quantity handled.

Respirator: Self-contained breathing apparatus

Ventilation: Fume cupboard, flameproof

Gloves: Nitrile

Eye Protection: Goggles or face-shield

Other Precautions: Plastic apron, sleeves, boots - if handling large quantities

9. Physical and chemical properties

Product description	Colourless liquid, fruity odour
---------------------	---------------------------------

Melting temperature	-93°C
---------------------	-------

Boiling temperature	121°C
Density(g/ml)	0.88
Vapour pressure	n/a
-Density	n/a
Solubility in water	Practically insoluble
Flash point	26°C
Explosion limits: lower:	n/a
Auto-ignition temperature	463°C

10. Stability and reactivity

Stable.

May react with oxidising materials.

11. Toxicological information

Irritating to eyes. May irritate skin. May be harmful if ingested in large quantities.

Further data

LD50 13000 mg/kg oral, rat.

No evidence of carcinogenic properties. No evidence of mutagenic or teratogenic effects.

12. Ecological information

No environmental hazard is anticipated provided that the material is handled and disposed of with due care and attention.

13. Disposal considerations

Chemical residues are generally classified as special waste, and as such are covered by regulations which vary according to location. Contact your local waste disposal authority for advice, or pass to a chemical disposal company. Rinse out empty containers thoroughly before returning for recycling.

14. Transport information

UN-No.: 1180	IMDG class: 3.3
IMO:	Packaging group:
IATA:	Packaging group:

Correct technical name:
ADR/RID:

15. Regulatory information

Labelling according to EC directives

Symbol:

R-phrases: R10
Flammable.

S-phrases: S16
Keep away from sources of ignition - No smoking.

EC-No.:

Local Regulations

UK Exposure Limits: None assigned

16. Other information

Date of issue: 18/08/94
Date of print: 07/01/02

ASHLAND
SAFETY DATA SHEET

ETHYLENE GLYCOL 20005

Page: 1
Revision Date: 06/13/2007
Print Date: 6/15/2007
MSDS Number: R0000003
Version: 2.0

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Ashland	Regulatory Information Number	1-800-325-3751
P.O. Box 2219	Telephone	614-790-3333
Columbus, OH 43216	Emergency telephone number	1-800-ASHLAND (1-800-274-5263)

Product name	ETHYLENE GLYCOL
Product code	20005
Product Use Description	No data

2. HAZARDS IDENTIFICATION

Emergency Overview

Appearance: liquid,, colourless

WARNING! MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY BE HARMFUL IF INHALED OR SWALLOWED. MAY BE HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE EYE IRRITATION.

Potential Health Effects

Routes of Exposure

Inhalation, Skin absorption, Skin contact, Eye Contact, Ingestion - Industrial products are not meant to be swallowed

Eye Contact

Can cause eye irritation. Symptoms include stinging, tearing, redness, and swelling of eyes.

Skin Contact

May cause mild skin irritation. Symptoms may include redness and burning of skin. Although rare, skin contact with ethylene glycol may cause allergic skin reaction (delayed skin rash which may be followed by blistering, scaling and other skin effects). Passage of this material into the body through the skin is possible, and may add to toxic effects from breathing or swallowing. Passage of this material into the body through the skin is possible, but it is unlikely that this would result in harmful effects during safe handling and use.

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Ingestion

Swallowing small amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Liver, kidney and brain damage in humans has resulted from swallowing lethal or near-lethal amounts of ethylene glycol.

Inhalation

It is possible to breathe this material under certain conditions of handling and use (for example, during heating, spraying, or stirring). Breathing small amounts of this material during normal handling is not likely to cause harmful effects. Breathing large amounts may be harmful. Symptoms are not expected at air concentrations below the recommended exposure limits, if applicable (see Section 8.).

Aggravated Medical Condition

Preexisting disorders of the following organs (or organ systems) may be aggravated by exposure to this material: lung (for example, asthma-like conditions), liver, kidney, central nervous system. Exposure to this material may aggravate any preexisting condition sensitive to a decrease in available oxygen, such as chronic lung disease, coronary artery disease or anemias.

Symptoms

Signs and symptoms of exposure to this material through breathing, swallowing, and/or passage of the material through the skin may include: stomach or intestinal upset (nausea, vomiting, diarrhea), irritation (nose, throat, airways), cough, central nervous system excitation (giddiness, liveliness, light-headed feeling) followed by central nervous system depression (dizziness, drowsiness, weakness, fatigue, nausea, headache, unconsciousness) and other central nervous system effects, involuntary eye movement, cyanosis (causes blue coloring of the skin and nails from lack of oxygen), lung edema (fluid buildup in the lung tissue), acute kidney failure (sudden slowing or stopping of urine production), kidney damage, liver damage, convulsions, coma, and death

Target Organs

Overexposure to this material (or its components) has been suggested as a cause of the following effects in laboratory animals: reproductive effects, kidney damage, liver damage, kidney damage, liver damage. Overexposure to this material (or its components) has been suggested as a cause of the following effects in humans: kidney damage, liver damage

Carcinogenicity

This material is not expected to cause cancer in humans since it did not cause cancer in laboratory animals. This material is not listed as a carcinogen by the

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ETHYLENE GLYCOL 20005

International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA).

Reproductive Hazard

Ethylene glycol has caused birth defects in animal studies at high oral doses. However, it did not cause harm to the pregnant animal or to the fetus when applied to the skin of the pregnant animal.

Other Information

No data

3. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS-No.	Concentration
ETHYLENE GLYCOL	107-21-1	<=100%

4. FIRST AID MEASURES

Eyes

If symptoms develop, immediately move individual away from exposure and into fresh air. Flush eyes gently with water for at least 15 minutes while holding eyelids apart; seek immediate medical attention.

Skin

Remove contaminated clothing. Wash exposed area with soap and water. If symptoms persist, seek medical attention. Launder clothing before reuse.

Ingestion

Seek medical attention. If individual is drowsy or unconscious, do not give anything by mouth; place individual on the left side with the head down. Contact a physician, medical facility, or poison control center for advice about whether to induce vomiting. If possible, do not leave individual unattended.

Inhalation

If symptoms develop, move individual away from exposure and into fresh air. If symptoms persist, seek medical attention. If breathing is difficult, administer oxygen. Keep person warm and quiet; seek immediate medical attention.

Notes to Physician

Hazards: Effects of acute ethylene glycol poisoning appear in three fairly distinct stages. The initial stage occurs shortly after exposure, lasts 6-12 hours, and is

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SAFETY DATA SHEET

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characterized by central nervous system effects (transient exhilaration, nausea, vomiting, and in severe cases, coma, convulsions, and possible death). The second stage lasts from 12-36 hours after exposure and is initiated by the onset of coma. This phase is characterized by tachypnea, tachycardia, mild hypotension, cyanosis, and in severe cases, pulmonary edema, bronchopneumonia, cardiac enlargement, and congestive failure. The final stage occurs 24-72 post-exposure and is characterized by renal failure, ranging from a mild increase in blood urea nitrogen and creatinine followed by recovery, to complete anuria with acute tubular necrosis that can lead to death. Oxaluria is found in most cases. The most significant laboratory finding in ethylene glycol intoxication is severe metabolic acidosis.

Treatment: This product contains ethylene glycol. Ethanol decreases the metabolism of ethylene glycol to toxic metabolites. Ethanol should be administered as soon as possible in cases of severe poisoning since the elimination half-life of ethylene glycol is 3 hours. If medical care will be delayed several hours, give the patient three to four 1-ounce oral "shots" of 86-proof or higher whiskey before or during transport to the hospital. Fomepizole (4-methylpyrazole) is an effective antagonist of alcohol dehydrogenase, and as such, may be used as an antidote in the treatment of ethylene glycol poisoning. Hemodialysis effectively removes ethylene glycol and its metabolites from the body.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

carbon dioxide (CO₂), dry chemical, water spray

Hazardous Combustion Products

May form: alcohols, aldehydes, carbon dioxide and carbon monoxide, ethers, toxic fumes

Precautions for Fire-Fighting

Never use welding or cutting torch on or near drum (even empty) because product (even just residue) can ignite explosively. Wear full firefighting turn-out gear (full Bunker gear), and respiratory protection (SCBA). No special precautions necessary when fighting fires involving this product.

Flammability Class for Flammable Liquids

Combustible Liquid Class IIIB

6. ACCIDENTAL RELEASE MEASURES

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Personal Precautions

No data

Environmental Precautions

No data

Methods for Cleaning Up

Persons not wearing protective equipment should be excluded from area of spill until clean-up has been completed. Stop spill at source, dike area of spill to prevent spreading, pump liquid to salvage tank. Remaining liquid may be taken up on sand, clay, earth, floor absorbent, or other absorbent material and shoveled into containers. Do not flush into sewers. Material should be placed in a container for recovery or transfer to a disposal facility. Absorb liquid on vermiculite, floor absorbent or other absorbent material. Persons not wearing proper personal protective equipment should be excluded from area of spill. Collect material with vacuum cleaner.

7. HANDLING AND STORAGE

Handling

Containers of this material may be hazardous when emptied. Since emptied containers retain product residues (vapor, liquid, and/or solid), all hazard precautions given in the data sheet must be observed. Warning. Sudden release of hot organic chemical vapors or mists from process equipment operating at elevated temperature and pressure, or sudden ingress of air into vacuum equipment, may result in ignitions without the presence of obvious ignition sources. Published "autoignition" or "ignition" temperature values cannot be treated as safe operating temperatures in chemical processes without analysis of the actual process conditions. Any use of this product in elevated temperature processes should be thoroughly evaluated to establish and maintain safe operating conditions.

Storage

Store in a cool, dry, ventilated area. Do not store near extreme heat, open flame, or sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

ETHYLENE GLYCOL

107-21-1

ACGIH

Ceiling Limit Value:

100 mg/m3

Aerosol.

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General Advice

These recommendations provide general guidance for handling this product. Personal protective equipment should be selected for individual applications and should consider factors which affect exposure potential, such as handling practices, chemical concentrations and ventilation. It is ultimately the responsibility of the employer to follow regulatory guidelines established by local authorities.

Exposure Controls

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLV(s).

Eye Protection

Chemical splash goggles in compliance with OSHA regulations are advised; however, OSHA regulations also permit other type safety glasses. Consult your safety representative.

Skin and Body Protection

To prevent repeated or prolonged skin contact, wear impervious clothing and boots. Wear resistant gloves such as: Natural Rubber polyvinyl chloride polyvinyl alcohol Polyethylene neoprene -- unsupported neoprene - supported

Respiratory Protection

If workplace exposure limit(s) of product or any component is exceeded (see exposure guidelines), a NIOSH-approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH respirators (negative pressure type) under specified conditions (see your industrial hygienist). Engineering or administrative controls should be implemented to reduce exposure.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	liquid
Form	viscous,
Colour	colourless
Odour	mild, sweet
Boiling point/range	387.7 °F / 197.6 °C @ 101.3232 kPa
Melting point/range	9 °F / -13 °C
pH	No data
Flash point	232 °F / 111 °C Closed Cup
Evaporation rate	< 1.00 (N-Butyl Acetate)
Explosion limits	3.2 %(V) 15.3 %(V)
Vapour pressure	0.012265 kPa @ 77 °F / 25 °C

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Vapour density	2.14
Density	1.114 g/cm ³ @ 68.00 °F / 20.00 °C 9.28 lb/gal @ 68 °F / 20 °C
Solubility	completely soluble in water
Partition coefficient (n-octanol/water)	No data
Autoignition temperature	748 °F / 398 °C

10. STABILITY AND REACTIVITY

Stability

Stable.

Conditions to Avoid

Avoid contact with: heat

Incompatible Products

Avoid contact with: alkali and alkaline earth, alkali metals, strong acids, strong alkalis, strong oxidizing agents

Hazardous Decomposition Products

May form: carbon dioxide and carbon monoxide

Hazardous Reactions

Product will not undergo hazardous polymerization.

Thermal Decomposition

No data

11. TOXICOLOGICAL INFORMATION

Acute Oral Toxicity

ETHYLENE GLYCOL

LD 50 Rat: 6,140 mg/kg
LD 50 Mouse: 14,600 mg/kg

Acute Inhalation Toxicity

Acute Dermal Toxicity

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LD 50 Rabbit: 10,611 mg/kg

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12. ECOLOGICAL INFORMATION

Aquatic Toxicity

Acute and Prolonged Toxicity to Fish

No data

Acute Toxicity to Aquatic Invertebrates

No data

Environmental Fate and Pathways

No data

13. DISPOSAL CONSIDERATIONS

Waste Disposal Methods Destroy by liquid incineration in accordance with applicable regulations. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922. For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Ashland Distribution's Environmental Services Group at 800-637-7922.

14. TRANSPORT INFORMATION

Dangerous goods descriptions (if indicated above) may not reflect package size, quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

15. REGULATORY INFORMATION

Additional Regulations

US. Toxic Substances Control Act (TSCA) Section 4(a) Proposed Test Rules (40 CFR 799, Subpts B & D)

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US. Toxic Substances Control Act (TSCA) Section 8(a) Inventory Update Rule (EPA Form U Instructions, App A)
US. High Production Volume Chemicals

US. Toxic Substances Control Act (TSCA) Section 4 - Master Testing List

US. OSHA Hazard Communication Standard: On One of the Floor Lists of the OSHA HCS (29 CFR 1910.1200).

SARA Hazard Classification Acute Health Hazard

SARA 313 Component(s)

ETHYLENE GLYCOL 107-21-1 100%

OSHA Hazards Moderate skin irritant
Moderate eye irritant

	Health	Flammability	Reactivity	Other
HMIS	1*	1	0	
NFPA	1	1	0	

16. OTHER INFORMATION

The information accumulated herein is believed to be accurate but is not warranted to be whether originating with the company or not. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This MSDS has been prepared by Ashland's Environmental Health and Safety Department (1-800-325-3751).

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

1 Identification of substance:**Product details:****Product name:** Ethyl propionate**Stock number:** 36605**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description:** (CAS#)

Ethyl propionate (CAS# 105-37-3): 100%

Identification number(s):**EINECS Number:** 203-291-4**EU Number:** 607-028-00-8**3 Hazards identification****Hazard description:***F* Highly flammable**Information pertaining to particular dangers for man and environment***R* 11 Highly flammable.**Classification system****HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	3
REACTIVITY	1

Health (acute effects) = 1

Flammability = 3

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 1)

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Use carbon dioxide, extinguishing powder or foam. Water may be ineffective but may be used for cooling exposed containers.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Prevent formation of aerosols.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Storage**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Information about storage in one common storage facility:

Do not store together with acids.

Do not store together with alkalies (caustic solutions).

Store away from water/moisture.

Keep away from heat and direct sunlight.

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 2)

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Clear
	Colorless
Odor:	Not determined

Change in condition

Melting point/Melting range:	-73°C (-99°F)
Boiling point/Boiling range:	99°C (210°F)
Sublimation temperature / start:	Not determined

Flash point:	12°C (54°F)
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Ignition temperature:	475°C (887°F)
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Decomposition temperature:	Not determined
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Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
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Explosion limits:

Lower:	1.8 Vol %
Upper:	11 Vol %

Vapor pressure at 27°C (81°F):	53 hPa (40 mm Hg)
---------------------------------------	-------------------

Density at 20°C (68°F):	0.891 g/cm ³
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(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 3)

Solubility in / Miscibility with
Alcohols:

Partly miscible

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Acids

Bases

Water/moisture

Heat

Dangerous reactions No dangerous reactions known**Dangerous products of decomposition:** Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:**LD/LC50 values that are relevant for classification:**

Oral	LD50	8732 mg/kg (rat)
Irritation of skin	moderate	500 mg/24H (rbt)
Irritation of eyes	moderate	100 mg (rbt)

Primary irritant effect:**on the skin:** Irritant to skin and mucous membranes.**on the eye:** Irritating effect.**Sensitization:** No sensitizing effects known.**Subacute to chronic toxicity:****Subacute to chronic toxicity:**

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Lungs, Thorax, or Respiration - other changes.

Gastrointestinal - other changes.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:**Recommendation**

Consult state, local or national regulations to ensure proper disposal.

(Contd. on page 5)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 4)

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class: 3
 Identification number: UN1195
 Packing group: II
 Proper shipping name (technical name): ETHYL PROPIONATE
 Label: 3

Land transport ADR/RID (cross-border)



ADR/RID class: 3 (F1) Flammable liquids
 Danger code (Kemler): 33
 UN-Number: 1195
 Packaging group: II
 Description of goods: 1195 ETHYL PROPIONATE

Maritime transport IMDG:



IMDG Class: 3
 UN Number: 1195
 Label: 3
 Packaging group: II
 Proper shipping name: ETHYL PROPIONATE

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3
 UN/ID Number: 1195
 Label: 3
 Packaging group: II
 Proper shipping name: ETHYL PROPIONATE

USA

(Contd. on page 6)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 09/15/2006

Reviewed on 09/08/2006

Product name: Ethyl propionate

(Contd. of page 5)

15 Regulations**Product related hazard informations:****Hazard symbols:**

F Highly flammable

Risk phrases:

11 Highly flammable.

Safety phrases:

16 Keep away from sources of ignition - No smoking.

23 Do not breathe gas/fumes/vapour/spray.

24 Avoid contact with skin.

29 Do not empty into drains.

33 Take precautionary measures against static discharges.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders

USA



Material Safety Data Sheet

Catalog Number: 221713
Revision date: 26-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Synonyms: Triethylmethane

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
3-ETHYL PENTANE	617-78-7	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Harmful to flora, fauna, soil organisms and aquatic organisms., Flammable

Category of Danger:

Flammable , Dangerous for the environment , Harmful

Principle routes of exposure: Skin

Inhalation: Harmful by inhalation.

Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin.

Eye contact: Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR INHALED.

Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Page 1 of 6

EPAHO011000142

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Specific hazards:

Unusual hazards:

Special protective equipment for firefighters:

Specific methods:

Flash point:

Autoignition temperature:

NFPA rating:

NFPA Health:	1
NFPA Flammability:	3
NFPA Reactivity:	0

Use dry chemical, CO2, water spray or 'alcohol' foam.

High flammability. Explosion hazard when in contact with heat or flame

None known

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Water mist may be used to cool closed containers.

Not determined

Not determined

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Environmental precautions:

Methods for cleaning up:

Use personal protective equipment.

Prevent product from entering drains.

Ground and bond containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Safe handling advice:

Technical measures/storage conditions:

Incompatible products:

Use only in area provided with appropriate exhaust ventilation.

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Formula:	C7H16
Melting point/range:	-118°C
Boiling point/range:	93°C
Density:	0.6982 g/ml
Vapor pressure:	No data available
Evaporation rate:	No data available
Vapor density:	No data available
Solubility (in water):	Insoluble
Flash point:	Not determined
Autoignition temperature:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	Strong oxidising agents
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

3-ETHYL PENTANE

RTECS Number:

Not Available

Selected LD50s and LC50s

Not Determined

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
3-ETHYL PENTANE	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
3-ETHYL PENTANE	Not Listed	Not Listed	Not Listed
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
3-ETHYL PENTANE	Not Listed	Not Listed	Not Listed
Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
3-ETHYL PENTANE	Not Listed	Not Listed	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
3-ETHYL PENTANE	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

**Contaminated packaging:
Methods for cleaning up:**

Do not re-use empty containers
Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No: 1265

DOT:

Proper shipping name: Pentanes liquid
IATA Hazard Label(s): Flammable Liquid
Hazard Class 3 - Flammable liquid
Packing group: II

Emergency Response Guide Number (ERG): 128

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
3-ETHYL PENTANE	Not Listed

TDG (Canada):**WHMIS hazard class:**

B2 flammable liquids

**IMDG/IMO**

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

Page 4 of 6

Proper shipping name:

Pentanes liquid

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan

U.S. DOT - Appendix B - Severe Marine
Pollutants

3-ETHYL PENTANE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

3-ETHYL PENTANE

Inventory - United States TSCA - Sect. 8(b)

Not Listed

Canada DSL Inventory List -

Not Listed

Inventory - China:

Present

EU EINECS List -

210-529-0; C7H16

Inventory - Japan:

2-7

Korean KECL:

KE-14012

Philippines PICCS:

Present

U.S. regulations:

Components

3-ETHYL PENTANE

California Proposition 65

Not Listed

Massachusetts Right to

Know List:

Not Listed

New Jersey Right to

Know List:

Not Listed

Pennsylvania Right to Know

List:

Not Listed

Components

3-ETHYL PENTANE

Florida substance List:

Not Listed

Rhode Island Right to

Know List:

Not Listed

Illinois - Toxic Air

Contaminants

Not Listed

Connecticut - Hazardous Air

Pollutants

Not Listed

Components

3-ETHYL PENTANE

SARA 313 Emission
reporting/Toxic Release
of Chemicals

Not Listed

CERCLA/SARA - Section 302
Extremely Haz

Not Listed

NTP:

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Catalog Number: 221713

Product name: 3-ETHYL PENTANE

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End of Safety Data Sheet



Material Safety Data Sheet

Catalog Number: 212808
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Synonyms: 2-Ethylhexane

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
2-ETHYLHEXANE	589-81-1	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Harmful to flora, fauna, soil organisms and aquatic organisms., Flammable

Category of Danger:

Flammable , Dangerous for the environment , Harmful

Principle routes of exposure: Skin

Inhalation: Harmful by inhalation.

Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin.

Eye contact: Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR INHALED.

Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Keep away from heat, sparks and flame. Keep containers closed. Use only with adequate ventilation. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 1 of 6

EPAHO011000148

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Use dry chemical, CO₂, water spray or 'alcohol' foam.

Specific hazards:

Flammable Extremely flammable

Unusual hazards:

None known

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Specific methods:

Water mist may be used to cool closed containers.

Flash point:

13.8°C

Autoignition temperature:

Not determined

NFPA rating:

NFPA Health: 1

NFPA Flammability: 3

NFPA Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Remove all sources of ignition. Use personal protective equipment.

Environmental precautions:

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up:

Soak up with inert absorbent material. Ground and bond containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Technical measures/storage conditions:

Keep away from heat and sources of ignition Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Catalog Number: 212808

Product name: 2-ETHYLHEXANE

Page 2 of 6

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Liquid
Formula:	C ₈ H ₁₈
Melting point/range:	No data available at this time.
Boiling point/range:	119°C
Density:	0.70582 g/ml
Vapor pressure:	No data available
Evaporation rate:	No data available
Vapor density:	No data available
Solubility (in water):	No data available
Flash point:	13.8°C
Autoignition temperature:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	Strong oxidising agents
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

2-ETHYLHEXANE

RTECS Number:

Not Available

Selected LD₅₀s and LC₅₀s

Not Determined

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components 2-ETHYLHEXANE	U.S. DOT - Appendix B - Marine Pollutan Not Listed	U.S. DOT - Appendix B - Severe Marine Pollutants Not Listed	United Kingdom - The Re List: Not Listed
Components 2-ETHYLHEXANE	Germany VCI (WGK) Not Listed	World Health Organization (WHO) - Drinking Water Not Listed	Ecotoxicity - Fish Species Data Not Listed
Components 2-ETHYLHEXANE	Ecotoxicity - Freshwater Algae Data Not Listed	Ecotoxicity - Microtox Data Not Listed	Ecotoxicity - Water Flea Data Not Listed
Components 2-ETHYLHEXANE	EPA - ATSDR Priority List Not Listed	EPA - HPV Challenge Program Chemical List Not Listed	California - Priority Toxic Pollutants Not Listed
Components 2-ETHYLHEXANE	California - Priority Toxic Pollutants Not Listed	California - Priority Toxic Pollutants Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

**Contaminated packaging:
Methods for cleaning up:**

Do not re-use empty containers
Soak up with inert absorbent material. Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No:

1206

DOT:

Proper shipping name:
IATA Hazard Label(s):
Hazard Class

Heptanes
Flammable Liquid
3 -
Flammable liquid
II

Packing group:**Emergency Response Guide Number (ERG):**

128

Components
2-ETHYLHEXANE

U.S. DOT - Appendix A Table 1 - Reportable Quantities
Not Listed

TDG (Canada):**WHMIS hazard class:**

B2 flammable liquids



IMDG/IMO**Proper shipping name:**

Heptanes

IMDG - Hazard Classifications

Not Applicable

Components**U.S. DOT - Appendix B - Marine Pollutan****U.S. DOT - Appendix B - Severe Marine
Pollutants**

2-ETHYLHEXANE

Not Listed

Not Listed

IMO-labels:**15. REGULATORY INFORMATION****International Inventories****Components**

2-ETHYLHEXANE

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Not Listed

Canada NDSL Inventory List -

C8H18

Inventory - China:

Present

EU EINECS List -

209-660-6; C8H18

Inventory - Japan:

2-8

Korean KECL:

KE-24151

U.S. regulations:**Components**

2-ETHYLHEXANE

California Proposition 65

Not Listed

Massachusetts Right to**Know List:**

Not Listed

New Jersey Right to**Know List:**

Not Listed

Pennsylvania Right to Know**List:**

Not Listed

Components

2-ETHYLHEXANE

Florida substance List:

Not Listed

Rhode Island Right to**Know List:**

Not Listed

Illinois - Toxic Air**Contaminants**

Not Listed

Connecticut - Hazardous Air**Pollutants**

Not Listed

Components

2-ETHYLHEXANE

**SARA 313 Emission
reporting/Toxic Release
of Chemicals**

Not Listed

**CERCLA/SARA - Section NTP:
302 Extremely Haz**

Not Listed

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

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End of Safety Data Sheet

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 12/05/2006

Reviewed on 08/07/2006

1 Identification of substance:**Product details:****Product name:** Ethyl formate**Stock number:**

A11113

L03027

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description:** (CAS#)

Ethyl formate (CAS# 109-94-4); 100%

Identification number(s):**EINECS Number:** 203-721-0**EU Number:** 607-015-00-7**3 Hazards identification****Hazard description:**

Xn Harmful

F Highly flammable

Information pertaining to particular dangers for man and environment

R 11 Highly flammable.

R 20/22 Harmful by inhalation and if swallowed.

R 36/37 Irritating to eyes and respiratory system.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	1
FIRE	2
REACTIVITY	1

Health (acute effects) = 1

Flammability = 2

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

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Product name: Ethyl formate

(Contd. of page 1)

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

CO2, extinguishing powder or water spray. Fight larger fire with alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

Fumes can combine with air to form an explosive mixture.

Gases can be produced if heated in sealed containers, causing possible rupture or explosion.

Storage**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

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(Contd. of page 2)

Information about storage in one common storage facility:

Do not store together with strongly basic or oxidizing materials.

Protect from heat.

Store away from water/moisture.

Further information about storage conditions:

Keep container tightly sealed.

Protect from humidity and water.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:**Ethyl Formate**

	ppm
ACGIH TLV	100
Austria TWA	100
Belgium TWA	100
Denmark TWA	100
Finland TWA	100; 150-STEL
France TWA	100
Germany TWA	100
Ireland TWA	100; 150-STEL
Netherlands TWA	100
Poland TWA	100
Switzerland TWA	100; 200-STEL
United Kingdom TWA	100; 150-STEL
USA PEL	100

Components with limit values that require monitoring at the workplace:

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves**Eye protection:** Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Clear liquid
Color:	Colorless

(Contd. on page 4)

USA

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acc. to OSHA and ANSI

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 3)

Odor:	Pleasant Aromatic
Change in condition	
Melting point/Melting range:	-80°C (-112°F)
Boiling point/Boiling range:	54°C (129°F)
Sublimation temperature / start:	Not determined
Flash point:	-19°C (-2°F)
Ignition temperature:	454°C (849°F)
Decomposition temperature:	Not determined
Auto igniting:	Self igniting at raised temperature.
Danger of explosion:	Product is not explosive. However, formation of explosive air/vapor mixtures is possible.
Explosion limits:	
Lower:	2.8 Vol %
Upper:	16 Vol %
Vapor pressure at 20°C (68°F):	0.0975 hPa (0 mm Hg)
Density at 20°C (68°F):	0.9170 g/cm ³
Solubility in / Miscibility with	
Water:	Fully miscible
Alcohols:	Soluble
Organic solvents:	Soluble in ether. Soluble in acetone.

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Bases

Heat

Water/moisture

Dangerous reactions

Unstable in the presence of bases which can lead to a vigorous reverse reaction that produces carbon monoxide gas, causing a possible explosion in a closed container.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	1110 mg/kg (gpg) 1850 mg/kg (rat) 2075 mg/kg (rbt)
Dermal	LD50	>20 mL/kg (rbt)
Inhalative	LCLo/4H	8000 ppm/4H (rat)

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USA

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acc. to OSHA and ANSI

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 4)

Irritation of skin mild 460 mg (rbt)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.**Other information (about experimental toxicology):**

Tumorigenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Ethyl formate can irritate the eyes and, more severely, the respiratory system. Ingestion or inhalation causes somnolence, dyspnea, and gastrointestinal disturbances. Laboratory experiments show that tumors can occur when applied periodically to the skin.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

The Registry of Toxic Effects of Chemical Substances (RTECS) contains tumorigenic and/or carcinogenic and/or neoplastic data for components in this product.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:****Hazard class:**

3

Identification number:

UN1190

Packing group:

II

Proper shipping name (technical name):

ETHYL FORMATE

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Product name: Ethyl formate

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Label

3

Land transport ADR/RID (cross-border)

ADR/RID class: 3 (F1) Flammable liquids
 Danger code (Kemler): 33
 UN-Number: 1190
 Packaging group: II
 Description of goods: 1190 ETHYL FORMATE

Maritime transport IMDG:

IMDG Class: 3
 UN Number: 1190
 Label: 3
 Packaging group: II
 Proper shipping name: ETHYL FORMATE

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
 UN/ID Number: 1190
 Label: 3
 Packaging group: II
 Proper shipping name: ETHYL FORMATE

15 Regulations**Product related hazard informations:****Hazard symbols:**

Xn Harmful
 F Highly flammable

Risk phrases:

11 Highly flammable.
 20/22 Harmful by inhalation and if swallowed.
 36/37 Irritating to eyes and respiratory system.

Safety phrases:

9 Keep container in a well-ventilated place.
 16 Keep away from sources of ignition - No smoking.
 24 Avoid contact with skin.
 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
 33 Take precautionary measures against static discharges.

(Contd. on page 7)

USA

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acc. to OSHA and ANSI

Printing date 12/05/2006

Reviewed on 08/07/2006

Product name: Ethyl formate

(Contd. of page 6)

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders

USA



Material Safety Data Sheet

Catalog Number: 221711
Revision date: 26-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

Supplier:
MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
ETHYL CYCLOPENTANE	1640-89-7	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable

Category of Danger:
Flammable

Principle routes of exposure: Skin
Inhalation: May cause irritation of respiratory tract
Ingestion: May be harmful if swallowed.
Skin contact: May cause allergic skin reaction
Eye contact: Avoid contact with eyes

Statements of hazard Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Keep away from heat, sparks and flame. Keep containers closed. Use only with adequate ventilation. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

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Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Carbon dioxide (CO₂), Dry chemical, Foam, Water may be ineffective., Use dry chemical, CO₂, water spray or 'alcohol' foam.

Specific hazards:

Dangerous fire hazard. Dangerous explosion hazard when exposed to heat or flame. Easily forms explosive mixtures in air. Extremely flammable

Unusual hazards:

None known

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Specific methods:

Water mist may be used to cool closed containers.

Flash point:

15.5°C

Autoignition temperature:

260 °C (500 °F)

NFPA rating:

NFPA Health: 1

NFPA Flammability: 3

NFPA Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Remove all sources of ignition. Use personal protective equipment.

Environmental precautions:

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up:

Soak up with inert absorbent material. Ground and bond containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Technical measures/storage conditions:

Keep away from heat and sources of ignition Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

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9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Colorless; gasoline-like odor
Physical state:	Liquid
Formula:	C7-H14
Molecular weight:	98.19
Melting point/range:	-138 °C (-216 °F)
Boiling point/range:	103 °C (218 °F)
Density:	0.763 at 20 °C (water = 1)
Vapor pressure:	No data available
Evaporation rate:	No data available
Vapor density:	3.4 (air = 1)
Solubility (in water):	Insoluble
Flash point:	15.5°C
Autoignition temperature:	260 °C (500 °F)

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	Strong oxidising agents
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

ETHYL CYCLOPENTANE

RTECS Number:

GY4450000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Re List:
ETHYL CYCLOPENTANE	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
ETHYL CYCLOPENTANE	Not Listed	Not Listed	Not Listed
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
ETHYL CYCLOPENTANE	Not Listed	Not Listed	Not Listed
Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
ETHYL CYCLOPENTANE	Not Listed	Not Listed	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
ETHYL CYCLOPENTANE	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

**Contaminated packaging:
Methods for cleaning up:**

Do not re-use empty containers
Soak up with inert absorbent material. Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No: 1993

DOT:

Proper shipping name:
IATA Hazard Label(s):
Hazard Class

Flammable liquid, n.o.s.
Flammable Liquid
3 -
Flammable liquid
II

Packing group:

Emergency Response Guide Number (ERG): 128

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
ETHYL CYCLOPENTANE	Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids



IMDG/IMO

Proper shipping name:

Flammable liquid, n.o.s.

IMDG - Hazard Classifications

Not Applicable

Components

U.S. DOT - Appendix B - Marine Pollutan

U.S. DOT - Appendix B - Severe Marine
Pollutants

ETHYL CYCLOPENTANE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

ETHYL CYCLOPENTANE

Inventory - United States TSCA - Sect. 8(b)

Not Listed

Canada DSL Inventory List -

Not Listed

EU EINECS List -

216-686-1; C7H14

Korean KECL:

KE-13586

Philippines PICCS:

Present

U.S. regulations:

Components

ETHYL CYCLOPENTANE

California Proposition 65

Not Listed

Massachusetts Right to

Know List:
[present]

New Jersey Right to

Know List:
Not Listed

Pennsylvania Right to Know

List:
[present]

Components

ETHYL CYCLOPENTANE

Florida substance List:

[present]

Rhode Island Right to

Know List:
Not Listed

Illinois - Toxic Air

Contaminants
Not Listed

Connecticut - Hazardous Air

Pollutants
Not Listed

Components

ETHYL CYCLOPENTANE

SARA 313 Emission
reporting/Toxic Release
of Chemicals

Not Listed

CERCLA/SARA - Section NTP:
302 Extremely Haz

Not Listed

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Catalog Number: 221711

Product name: ETHYL CYCLOPENTANE

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End of Safety Data Sheet



Material Safety Data Sheet

Catalog Number: 219203
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
ETHYLCYCLOHEXANE	1678-91-7	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable

Category of Danger:

Flammable

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

Catalog Number: 219203

Product name: ETHYLCYCLOHEXANE

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5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Carbon dioxide (CO ₂), Dry chemical, Foam, Water may be ineffective.
Specific hazards:	Burning produces irritant fumes.
Unusual hazards:	None known
Special protective equipment for firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific methods:	Water mist may be used to cool closed containers.
Flash point:	Not determined
Autoignition temperature:	238 °C (460 °F)
NFPA rating:	
NFPA Health:	1
NFPA Flammability:	1
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Use personal protective equipment.
Environmental precautions:	Prevent product from entering drains.
Methods for cleaning up:	Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:
ROOM TEMPERATURE

Handling:	Use only in area provided with appropriate exhaust ventilation.
Safe handling advice:	Wear personal protective equipment.
Incompatible products:	Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Colorless
Physical state:	Liquid
Formula:	C ₈ H ₁₆
Molecular weight:	112.21
Melting point/range:	-111 °C (-168 °F)
Boiling point/range:	132 °C (269 °F)
Catalog Number: 219203	Product name: ETHYLCYCLOHEXANE

Density:	0.792 at 20 °C (water = 1)
Vapor pressure:	26 mm Hg at 38 °C
Evaporation rate:	No data available
Vapor density:	3.9 (air = 1)
Solubility (in water):	Insoluble
Flash point:	Not determined
Autoignition temperature:	238 °C (460 °F)

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	-
Conditions to avoid:	Forms explosive mixture with air. Incompatible with oxidizers, acids and caustics. Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

ETHYLCYCLOHEXANE

RTECS Number:

Not Available

Selected LD50s and LC50s

Not Determined

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
ETHYLCYCLOHEXANE	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
ETHYLCYCLOHEXANE	Not Listed	Not Listed	Not Listed
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
ETHYLCYCLOHEXANE	Not Listed	Not Listed	Not Listed

Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
ETHYLCYCLOHEXANE	Not Listed	Not Listed	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
ETHYLCYCLOHEXANE	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging:

Do not re-use empty containers

14. TRANSPORT INFORMATION**UN/Id No:**

Not regulated

DOT:**Proper shipping name:**

Not Regulated

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
ETHYLCYCLOHEXANE	Not Listed

TDG (Canada):**WHMIS hazard class:**

Non-controlled

IMDG/IMO**IMDG - Hazard Classifications**

Not Applicable

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants
ETHYLCYCLOHEXANE	Not Listed	Not Listed

IMO-labels:**15. REGULATORY INFORMATION****International Inventories**

Components	
ETHYLCYCLOHEXANE	
Inventory - United States TSCA - Sect. 8(b)	Present
Canada DSL Inventory List -	Not Listed
Canada NDSL Inventory List -	Present
Australia (AICS):	Present
Catalog Number: 219203	
Product name: ETHYLCYCLOHEXANE	

EU EINECS List -
Inventory - Japan:
Korean KECL:

216-835-0; C8H16
3-2231
KE-13575

U.S. regulations:**Components**

ETHYLCYCLOHEXANE

California Proposition 65	Massachusetts Right to Know List:	New Jersey Right to Know List:	Pennsylvania Right to Know List:
Not Listed	[present]	Not Listed	[present]

Components

ETHYLCYCLOHEXANE

Florida substance List:	Rhode Island Right to Know List:	Illinois - Toxic Air Contaminants	Connecticut - Hazardous Air Pollutants
[present]	Not Listed	Not Listed	Not Listed

Components

ETHYLCYCLOHEXANE

SARA 313 Emission reporting/Toxic Release of Chemicals	CERCLA/SARA - Section 302 Extremely Haz	NTP:	IARC:
Not Listed	Not Listed	None	None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION**Prepared by: Health & Safety**

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet

Material Safety Data Sheet

Ethyl 4-(dimethylamino)butanoate

ACC# 13489

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyl 4-(dimethylamino)butanoate

Catalog Numbers: XBX00237CB, XBX00237DA, XBX00237ZZ

Synonyms:

Company Identification:

Maybridge PLC
Trevillet, Tintagel
Cornwall, England. PL34 0HW

For information, call: +44(0)1840770453

For emergencies, call: +44(0)7702924616

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
22041-23-2	Ethyl 4-(dimethylamino)butanoate	80+%	unlisted

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Not available. Appearance: Not available.

Not available.

Target Organs: Respiratory system, gastrointestinal system, eyes, skin.

Potential Health Effects

Eye: Causes eye burns.

Skin: Harmful if absorbed through the skin. Causes skin burns.

Ingestion: Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation: Harmful if inhaled. Causes chemical burns to the respiratory tract.

Chronic: Not available.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use foam, dry chemical, or carbon dioxide.

Flash Point: Not available

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: Not published.

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Do not breathe dust, vapor, mist, or gas. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood.

Storage: Store in a cool, dry place. Store in a tightly closed container. Corrosives area.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethyl 4-(dimethylamino)butanoate	none listed	none listed	none listed

OSHA Vacated PELs: Ethyl 4-(dimethylamino)butanoate: No OSHA Vacated PELs are listed for

this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: Not available.

Odor: Not available.

pH: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 77 - 79 deg C @14mm Hg

Freezing/Melting Point: Not available.

Decomposition Temperature: Not available.

Solubility: Not available.

Specific Gravity/Density: Not available.

Molecular Formula: C₈H₁₇NO₂

Molecular Weight: 159.23

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials.

Incompatibilities with Other Materials: Strong oxidizing agents, strong reducing agents, strong acids, strong bases.

Hazardous Decomposition Products: Carbon monoxide, oxides of nitrogen, carbon dioxide.

Hazardous Polymerization: Has not been reported

Section 11 - Toxicological Information

RTECS#:

CAS# 22041-23-2: ES9600000

LD50/LC50:

Not available.

carcinogenicity:

CAS# 22041-23-2: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No data available.

Teratogenicity: No data available.
Reproductive Effects: No data available.
Mutagenicity: No data available.
Neurotoxicity: No data available.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.
Environmental: No information available.
Physical: No information available.
Other: Do not empty into drains.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	AMINES, LIQUID, CORROSIVE, N.O.S.*	AMINES, LIQUID, CORROSIVE, N.O.S.*
Hazard Class:	8	8
UN Number:	UN2735	UN2735
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 22041-23-2 is not listed on the TSCA inventory. It is for research and development use only.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

Section 313 No chemicals are reportable under Section 313.**Clean Air Act:**

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 22041-23-2 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

C

Risk Phrases:

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 22041-23-2: No information available.

Canada - DSL/NDSL

None of the chemicals in this product are listed on the DSL or NDSL list.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 2/10/2006
Revision #0 Date: Original.

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profit or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

Ethyl Benzene

ACC# 08780

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethyl Benzene

Catalog Numbers: 02751 1, 02751-1, 027511

Synonyms: Ethylbenzol; Phenylethane

Company Identification:

Fisher Scientific

1 Reagent Lane

Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
100-41-4	Ethylbenzene	100	202-849-4

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. **Flash Point:** 21 deg C.

Warning! Causes eye irritation. **Flammable liquid and vapor.** Causes skin irritation. May be absorbed through intact skin. Aspiration hazard if swallowed. Can enter lungs and cause damage. Causes digestive and respiratory tract irritation. May cause central nervous system depression.

Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes moderate eye irritation. Vapors may cause eye irritation.

Skin: Causes skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. May be absorbed through the skin. Contact with the liquid may cause erythema (redness), exfoliation and vesiculation (blistering).

Ingestion: May cause irritation of the digestive tract. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.

Inhalation: Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. Causes respiratory tract irritation. Vapors may cause dizziness or suffocation.

Chronic: Chronic inhalation may cause effects similar to those of acute inhalation.

Section 4 - First Aid Measures

Eyes: Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: Containers can build up pressure if exposed to heat and/or fire. As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors may be heavier than air. They can spread along the ground and collect in low or confined areas. Containers may explode when heated.

Extinguishing Media: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. For large fires, use water spray, fog or alcohol-resistant foam. Contact professional fire-fighters immediately. Cool containers with flooding quantities of water until well after fire is out.

Flash Point: 21 deg C (69.80 deg F)

Autoignition Temperature: 810 deg F (432.22 deg C)

Explosion Limits, Lower:0.8

Upper: 6.7

NFPA Rating: (estimated) Health: 3; Flammability: 4; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep containers tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.

Storage: Keep away from heat, sparks, and flame. Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylbenzene	100 ppm TWA; 125 ppm STEL	100 ppm TWA; 435 mg/m ³ TWA 800 ppm IDLH	100 ppm TWA; 435 mg/m ³ TWA

OSHA Vacated PELs: Ethylbenzene: 100 ppm TWA; 435 mg/m³ TWA

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves and clothing to prevent skin exposure.

Clothing: Wear appropriate protective gloves and clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: clear, colorless

Odor: aromatic odor

pH: Not available.

Vapor Pressure: 7.1 mm Hg @ 20 C

Vapor Density: 3.7

Evaporation Rate: <1 (butyl acetate=1)

Viscosity: 0.63 mPa s 20 C

Boiling Point: 277 deg F

Freezing/Melting Point: -139 deg F

Decomposition Temperature: Not available.

Solubility: Insoluble.

Specific Gravity/Density: 0.9

Molecular Formula: C₈H₁₀

Molecular Weight: 106.07

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.

Conditions to Avoid: Incompatible materials, ignition sources, excess heat.

Incompatibilities with Other Materials: Oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 100-41-4: DA0700000

LD50/LC50:

CAS# 100-41-4:

Draize test, rabbit, eye: 500 mg Severe;
Inhalation, mouse: LC50 = 35500 mg/m³/2H;
Inhalation, rat: LC50 = 55000 mg/m³/2H;
Oral, rat: LD50 = 3500 mg/kg;
Oral, rat: LD50 = 3500 mg/kg;
Skin, rabbit: LD50 = 17800 uL/kg;

al, rat: LD50 = 5.46

Carcinogenicity:

CAS# 100-41-4:

- **ACGIH:** A3 - Confirmed animal carcinogen with unknown relevance to humans
- **California:** carcinogen, initial date 6/11/04
- **NTP:** Not listed.
- **IARC:** Group 2B carcinogen

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: Mutation in mammalian somatic cells(Rodent,mouse) Lymphocyte = 80 mg/L.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Rainbow trout: 14.0 mg/L; 96 Hr.; StaticFish: Fathead Minnow: 12.1 mg/L; 96 Hr.; Flow-throughFish: Bluegill/Sunfish: LC50 =150.0 mg/L; 96 Hr.; Flow-throughWater flea EC50 =2.1 mg/L; 48 Hr.; StaticBacteria: EC50 =9.8 mg/L; 30 minutes; Micotox TestWater flea LC50 =75.0 mg/L; 48 minutes; Static, pH6.7-8.1, 72.0 mg/L CaCO₃ Shrimp (mysidoposis bahia), LC50=87.6 mg/L/96hr. Sheepshead minnow LC50=275 mg/L/96hr. Fathead minnow LC50=42.3 mg/L/96hr in hard water &48.5 mg/L/96hr in softwater.

Environmental: Experimental data on the bioconcentration of ethylbenzene include a log BCF of

1.9 in goldfish and the log BCF of 0.67 for clams exposed to the water-soluble fraction of crude oil. Using its octanol/water partition coefficient (log Kow= 3.15) and using a recommended regression equation, one can calculate a log BCF in fish of 2.16 indicating that ethylbenzene would not significantly bioconcentrate in aquatic organisms. Ethylbenzene has a moderate adsorption for soil. The measured Koc for silt loam was 164

Physical: The predominant photochemical reaction of ethylbenzene in the atmosphere is with hydroxyl radicals; the tropospheric half-life for this reaction is 5.5 and 24 hr in the summer and winter, respectively. Degradation is somewhat faster under photochemical smog situations. Photooxidation products which have been identified include ethylphenol, benzaldehyde, acetophenone and m- and p-ethylnitrobenzene. Ethylbenzene is resistant to hydrolysis. Ethylbenzene does not significantly absorb light above 290 nm in methanol solution.

Other: No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Part 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ETHYLBENZENE	ETHYL BENZENE
Hazard Class:	3	3
UN Number:	UN1175	UN1175
Packing Group:	II	II
Additional Info:		FLASHPOINT 15C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 100-41-4 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 100-41-4: Effective 6/19/87, Sunset 6/19/97

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 100-41-4: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 100-41-4: immediate, delayed, fire.

Section 313

This material contains Ethylbenzene (CAS# 100-41-4, 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 100-41-4 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 100-41-4 is listed as a Hazardous Substance under the CWA. CAS# 100-41-4 is listed as a Priority Pollutant under the Clean Water Act. CAS# 100-41-4 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 100-41-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Ethylbenzene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

XN F

Risk Phrases:

R 11 Highly flammable.

R 20 Harmful by inhalation.

Safety Phrases:

S 16 Keep away from sources of ignition - No smoking.

S 24/25 Avoid contact with skin and eyes.

S 29 Do not empty into drains.

WGK (Water Danger/Protection)

CAS# 100-41-4: 1

Canada - DSL/NDSL

CAS# 100-41-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 100-41-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 4/28/1999

Revision #4 Date: 10/03/2005

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

Version 3.0
Revision Date 03/22/2007
Print Date 08/16/2007

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Ethyl acetate**

Product Number : 58958
Brand : Fluka

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₄H₈O₂

CAS-No.	EC-No.	Index-No.	Concentration [%]
Ethyl acetate			
141-78-6	205-500-4	607-022-00-5	-

3. HAZARDS IDENTIFICATION**Emergency Overview****OSHA Hazards**

Flammable Liquid
Delayed target organ effects
Moderate eye irritant

Target Organs

Blood, Kidney, Liver, Central nervous system

HMIS Classification

Health Hazard: 2
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating

Health Hazard: 2
Fire: 3
Reactivity Hazard: 1

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation. Vapours may cause drowsiness and dizziness.

Skin	May be harmful if absorbed through skin. May cause skin irritation. Repeated exposure may cause skin dryness or cracking.
Eyes	Causes eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point -3.0 °C (26.6 °F) - closed cup

Ignition temperature 427 °C (801 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water. Carbon dioxide (CO₂)

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Ethyl acetate	141-78-6	TWA	400 ppm 1,440 mg/m3	1996-05-18	US. American Conference of Governmental and Industrial Hygienists Threshold Limit Values for Chemical Substances in the Work Environment; Annual Reports for the Year 2004; Committees on Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs)
Remarks	Refers to Appendix A -- Carcinogens. 1996 Adoption				
		TWA	400 ppm 1,400 mg/m3	1989-03-01	US. Department of Labor - Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1000 Z-1-A
		TWA	400 ppm 1,400 mg/m3	1993-06-30	US. Department of Labor - Occupational Safety and Health Administration (OSHA) Permissible Exposure Limits (PEL) 29 CFR 1910.1000 Air Contaminants.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Impervious clothing. Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	clear, liquid
Colour	colourless

Safety data

pH	no data available
Melting point	-84.0 °C (-119.2 °F)
Boiling point	76.5 - 77.5 °C (169.7 - 171.5 °F)
Flash point	-3.0 °C (26.6 °F) - closed cup
Ignition temperature	427 °C (801 °F)
Lower explosion limit	2.2 %(V)
Upper explosion limit	11.5 %(V)
Vapour pressure	97.3 hPa (73.0 mmHg) at 20.0 °C (68.0 °F)
Density	0.90 g/cm3
Water solubility	soluble
Partition coefficient (n-octanol/water)	log Pow: 0.73

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong oxidizing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 5,620 mg/kg

LC50 Inhalation - mouse - 2 h - 45,000 mg/m3

LD50 Dermal - rabbit - > 180,000 mg/kg

Irritation and corrosion

Skin: no data available

Sensitization

Remarks: no data available

Chronic exposure

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Signs and Symptoms of Exposure

Central nervous system depression, Drowsiness, narcosis, anemia

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability Remarks: no data available

Ecotoxicity effects

Toxicity to fish LC50 - Oncorhynchus mykiss (rainbow trout) - 350.00 - 600.00 mg/l - 96 h
LC50 - Pimephales promelas (fathead minnow) - 220.00 - 250.00 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia magna (Water flea) - 2,300.00 - 3,090.00 mg/l - 24 h
LC50 - Daphnia magna (Water flea) - 560 mg/l - 48 h

Toxicity to algae EC50 - No information available. - 4,300.00 mg/l - 24 h
EC50 - SELENASTRUM - 1,800.00 - 3,200.00 mg/l - 72 h

Further information on ecology
no data available

13. DISPOSAL CONSIDERATIONS

Product

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-No.: 1173 Class: 3 Packing group: II
Proper shipping name: Ethyl acetate

IMDG

UN-No.: 1173 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ETHYL ACETATE
Marine pollutant: No

IATA

UN-No.: 1173 Class: 3 Packing group: II
Proper shipping name: Ethyl acetate

15. REGULATORY INFORMATION

OSHA Hazards

Flammable Liquid, Delayed target organ effects, Moderate eye irritant

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Ethyl acetate	CAS-No. 141-78-6	Revision Date 1989-12-01
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Pennsylvania Right To Know Components

Ethyl acetate	CAS-No. 141-78-6	Revision Date 1989-12-01
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New Jersey Right To Know Components

Ethyl acetate	CAS-No. 141-78-6	Revision Date 1989-12-01
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California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

Copyright (2007): Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only., The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Close

Material Safety Data Sheet

ULTRA Scientific - 250 Smith Street - North Kingstown, RI, USA 02852 - 401-294-9400

Product # RCC-181

Last Updated: 11/14/2006

Section I Product Identification

Name: Ethyl Alcohol

Matrix: neat compound

Section II Composition / Information on Ingredients

Component	CAS #	% by Wt.	LD50	OSHA PEL	ACGIH TLV	RTECS #	Codes
ethyl alcohol	000064-17-5	100	21000 mg/kg oral rat	N/A	1884 mg/m3	KQ6300000	
Codes: A-OSHA regulated carcinogen; B-IARC Group 1 carcinogen; C-IARC Group 2A carcinogen; D-IARC Group 2B carcinogen; E-NTP Group 1 carcinogen; F-NTP Group 2 carcinogen; G-SARA Title III compound; H-California Proposition 65 compound.							

Section III Hazards Identification

Contains carcinogen(s) or cancer suspect agent(s)

All chemicals should be considered hazardous - direct physical contact should be avoided.

Section IV First Aid Measures

Inhalation: If inhaled, remove to fresh air. Give oxygen, if necessary. Contact a physician.

Skin Contact: In case of skin contact, flush with copious amounts of water. Remove contaminated clothing. Contact a physician.

Eye Contact: In case of eye contact, flush with copious amounts of water, lifting eyelids occasionally. Contact a physician.

Ingestion: If ingested, contact poison center immediately for recommended procedure. Contact a physician.

Section V Fire Fighting Measures

Fire and Explosion Hazard Data for Compound

Fire Hazard: N/A

Extinguishing Media: Carbon dioxide, dry chemical powder, or water spray

Section VI Accidental Release Measures

Ventilate area of the leak or spill. Wear appropriate personal protective equipment as specified in Section VIII. A leaking bottle, vial, or ampule may be placed in a plastic bag, and normal disposal procedures followed. Take up spilled material with sand or other non-combustible absorbant material, and place in an appropriate container for later disposal. Flush spill area with water.

Section VII Handling and Storage

May be stored at room temperature

Keep in a tightly closed container, and store in a corrosion proof area.

This product should only be used by persons trained in the safe handling of hazardous chemicals.

Section VIII Exposure Controls / Personal Protection

Ensure that there is adequate ventilation to prevent airborne levels from exceeding recommended exposure limits (see Section II). Use appropriate MSHA/NIOSH approved safety equipment. Wear chemical goggles, face shield, gloves, and chemical resistant clothing, such as a laboratory coat and/or a rubber apron, to prevent contact with eyes, skin, and clothing.

Section IX Physical and Chemical Properties

Physical Data for Compound

Melting Pt.: N/A

Boiling Pt.: N/A

Density: N/A

Vapor Pressure: N/A

Vapor Density: N/A

Water Solubility: N/A

Appearance: N/A

Odor: N/A

Flash Point: N/A

Auto-Ignition Temperature: N/A

LEL: N/A

UEL: N/A

Section X Stability and Reactivity

Reactivity Data for Compound

Stability: stable

Incompatibilities: N/A

Hazardous Decomposition Products: N/A

Hazardous Effects of Polymerization: no

Section XI Toxicological Information

See Section II for specific toxicological information for the ingredients of this product.

Section XII Ecological Information

No information is available.

Section XIII Disposal Considerations

Recycle, if possible. Any material which cannot be saved for recovery or recycling should be disposed of at an appropriate and approved waste disposal facility. Processing, use, and/or contamination of this product may change waste management requirements. Observe all applicable federal, state, and local environmental regulations concerning disposal.

Section XIV Transport Information

Shipment Type: Dangerous Goods in Excepted Quantity (US DOT Small Quantity Exemption)

UN Number: UN1170

Shipping Class: 3

Packing Group: II

Section XV Regulatory Information

No information is available.

Section XVI Other Information

The above information is believed to be correct, but does not purport to be all-inclusive. This data should be used only as a guide in handling this material. ULTRA Scientific, Inc., shall not be held liable for any damage resulting from handling or from contact with the above product.

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MATERIAL SAFETY DATA SHEET

REVISION DATE: 01-30-2007

SUPERSEDES: None

SECTION 1: CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

COMPANY INFORMATION

Specialty Construction Brands, Inc.
(formerly TEC Specialty Products, Inc.
An H.B. Fuller Company)
315 South Hicks Road
Palatine, IL 60067
Phone: 847-358-9500

Medical Emergency Phone Number (24 Hours): 1-888-853-1758

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

PRODUCT INFORMATION

PRODUCT IDENTIFIER: 825349PM
PRODUCT NUMBER: TA0440A MTO TINT
PRODUCT DESCRIPTION: Epoxy resin

SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

Unlisted ingredients are not 'hazardous' per the Occupational Safety and Health Administration Hazard Communication Standard (29 CFR 1910.1200) and/or are not found on the Canadian Workplace Hazardous Materials Information System ingredient disclosure list. See Section 8 for any additional exposure limit guidelines.

Chemical Name	CAS #	PERCENT	OSHA PEL
Epoxy resin	25085-99-8	50 - 70	Not established
Epoxy resin	68609-97-2	5 - 10	Not established
Glass oxide, bubbles	65997-17-3	5 - 10	TWA 6 MG/M3
Calcium carbonate	471-34-1	1 - 5	TWA (Respirable dust) 5 MG/M3 TWA (Total dust) 15 MG/M3
Titanium dioxide	13463-67-7	1 - 5	TWA (Total dust) 10 MG/M3
Crystalline silica	14808-60-7	0.1 - 1	TWA (Respirable dust) 0.1 MG/M3
Carbon black	1333-86-4	0.1 - 1	TWA 3.5 MG/M3
Titanium dioxide (Rutile)	1317-80-2	0.1 - 1	TWA (Total dust) 10 MG/M3

MATERIAL SAFETY DATA SHEET

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Moderate eye irritant.
Causes skin irritation. May cause allergic skin reaction.

Harmful if swallowed.
Cancer hazard.

HMIS RATING: HEALTH -- 2 FLAMMABILITY -- 1 REACTIVITY -- 0
See SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for personal protective equipment recommendations.

POTENTIAL HEALTH EFFECTS BY ROUTE OF ENTRY

EYE: Can cause moderate irritation, tearing and reddening, but not likely to permanently injure eye tissue.

SKIN: Can cause moderate skin irritation, defatting, and dermatitis. Not likely to cause permanent damage. May cause sensitization.

INHALATION: Can cause minor respiratory irritation. Inhalation of dusts produced during cutting, grinding or sanding of this product may cause irritation of the respiratory tract.
Overexposure to crystalline silica may cause silicosis. This product contains one or more materials that may be hazardous when present as an airborne dust. During normal handling of the product, the material is encapsulated within the product and will not present an exposure risk. Once the product has reached its final state and is abraded or disturbed, dusting and exposure may occur.

INGESTION: Ingestion is not an anticipated route of exposure. Harmful if swallowed. Irritating to mouth, throat, and stomach.

LONG-TERM (CHRONIC) HEALTH EFFECTS

TARGET ORGAN(S): Skin Lungs

REGULATED CARCINOGEN STATUS:

Unless noted below, this product does not contain regulated levels of NTP, IARC, ACGIH, or OSHA listed carcinogens.

Titanium dioxide
Crystalline silica
Carbon black
Titanium dioxide (Rutile)

EXISTING HEALTH CONDITIONS AFFECTED BY EXPOSURE: Skin disease including eczema and sensitization; Lung disease

SECTION 4: FIRST AID MEASURES

IF IN EYES: Flush eyes with plenty of water for at least 20 minutes retracting eyelids often. Tilt the head to prevent chemical from transferring to the uncontaminated eye. Get immediate medical attention.

IF ON SKIN: Wash with soap and water. Remove contaminated clothing and launder. Get medical attention if irritation develops or persists.

IF VAPORS INHALED: Remove to fresh air. Call a physician if symptoms persist.

MATERIAL SAFETY DATA SHEET

IF SWALLOWED: Do not induce vomiting. Seek medical attention immediately. Drink two glasses of water or milk to dilute. Do not give anything by mouth to an unconscious person. Induced vomiting may lead to aspiration the material into the lungs potentially causing chemical pneumonitis that may be fatal.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT:	Not applicable
AUTOIGNITION TEMPERATURE:	Not established
LOWER EXPLOSIVE LIMIT (% in air):	Not established
UPPER EXPLOSIVE LIMIT (% in air):	Not established
EXTINGUISHING MEDIA:	Use water spray, foam, dry chemical or carbon dioxide.
UNUSUAL FIRE AND EXPLOSION HAZARDS:	Material will burn in a fire.
SPECIAL FIRE FIGHTING INSTRUCTIONS:	Persons exposed to products of combustion should wear self-contained breathing apparatus and full protective equipment.
HAZARDOUS COMBUSTION PRODUCTS:	Carbon dioxide, Carbon monoxide Silicon dioxide

SECTION 6: ACCIDENTAL RELEASE MEASURES

SPECIAL PROTECTION:	Exposure to the spilled material may be irritating or harmful. Follow personal protective equipment recommendations found in Section 8 of this MSDS. Additional precautions may be necessary based on special circumstances created by the spill including; the material spilled, the quantity of the spill, the area in which the spill occurred.
CLEAN-UP:	Dike if necessary, contain spill with inert absorbent and transfer to containers for disposal. Keep spilled product out of sewers, watersheds, or water systems.

Transport Emergency Phone Number (CHEMTREC): 1-800-424-9300

SECTION 7: HANDLING AND STORAGE

Handling: Harmful or irritating material. Avoid contacting and avoid breathing the material. Use only in a well ventilated area.

Storage: Store in a cool, dry place.

Consult the Technical Data Sheet for specific storage instructions.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

EYE PROTECTION:	Wear safety glasses with side shields when handling this product. Wear additional eye protection such as chemical splash goggles and/or face shield when the possibility exists for eye contact with splashing or spraying liquid, or airborne material. Have an eye wash station available.
SKIN PROTECTION:	Avoid skin contact by wearing chemically resistant gloves and long sleeved shirt. An apron may be appropriate if splashing can occur.
GLOVES:	Nitrile
RESPIRATORY PROTECTION:	Respiratory protection may be required to avoid overexposure when handling this product. Use a respirator if general room ventilation is not available or sufficient to eliminate symptoms. NIOSH approved air purifying respirator with dust/mist filter if product is sprayed. Respirators should be selected by and used following requirements found in OSHA's respirator standard (29 CFR 1910.134).
VENTILATION:	Use local exhaust ventilation or other engineering controls to

MATERIAL SAFETY DATA SHEET

minimize exposures.

EXPOSURE LIMITS:

Chemical Name	ACGIH EXPOSURE LIMITS	AIHA WEEL
Epoxy resin	Not established	Not established
Epoxy resin	Not established	Not established
Glass oxide, bubbles	TWA 10 MG/M3	Not established
Calcium carbonate	TWA 10 MG/M3	Not established
Titanium dioxide	TWA 10 MG/M3	Not established
Crystalline silica	TWA (Respirable dust) 0.05 MG/M3	Not established
Carbon black	TWA 3.5 MG/M3	Not established
Titanium dioxide (Rutile)	TWA (Total dust) 10 MG/M3	Not established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
COLOR:	White
ODOR:	Aromatic Mild
ODOR THRESHOLD:	Not established
WEIGHT PER GALLON (lbs.):	9.00
SPECIFIC GRAVITY:	1.08
SOLIDS (% by weight):	100.0

pH:	Not established
BOILING POINT (deg. C):	Not established
FREEZING/MELTING POINT (deg. C):	Not established
VAPOR PRESSURE (mm Hg):	Not established
VAPOR DENSITY:	Not established
EVAPORATION RATE:	Not established
OCTANOL/WATER COEFFICIENT:	Not established

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal conditions.
CHEMICAL INCOMPATIBILITY:	Not established
HAZARDOUS POLYMERIZATION:	Will not occur.
HAZARDOUS DECOMPOSITION PRODUCTS:	Carbon monoxide, carbon dioxide Silicon dioxide

MATERIAL SAFETY DATA SHEET

SECTION 11: TOXICOLOGICAL INFORMATION

CHEMICAL NAME	LD50/LC50
Epoxy resin	Not established
Epoxy resin	Not established
Glass oxide, bubbles	Not established
Calcium carbonate	Oral LD50 Rat = 6450 mg/kg
Titanium dioxide	Not established
Crystalline silica	Not established
Carbon black	Oral LD50 Rat > 15400 mg/kg Dermal LD50 Rabbit > 3 g/kg
Titanium dioxide (Rutile)	Not established

TOXICOLOGY SUMMARY: No additional health information available.

SECTION 12: ECOLOGICAL INFORMATION

OVERVIEW: No ecological information available

SECTION 13: DISPOSAL CONSIDERATIONS

To the best of our knowledge, this product does not meet the definition of hazardous waste under the U.S. EPA Hazardous Waste Regulations 40 CFR 261. Disposal via incineration at an approved facility is recommended. Consult state, local or provincial authorities for more restrictive requirements.

SECTION 14: TRANSPORTATION INFORMATION

Consult Bill of Lading for transportation information.

DOT: NOT REGULATED

IATA: NOT REGULATED

SECTION 15: REGULATORY INFORMATION

INVENTORY STATUS

U.S. EPA TSCA: This product is in compliance with the Toxic Substances Control Act's Inventory requirements.

If you need more information about the inventory status of this product call 651-236-5858.

This product may contain chemical substances that are regulated for export by various government agencies (such as the Environmental Protection Agency, the Bureau of Industry and Security, or the Drug Enforcement Administration, among others). Before exporting this product from the USA or Canada, we recommend you contact us at 651-236-5858 (USA) or 450-655-1306 x227 (Canada) to request an export review.

MATERIAL SAFETY DATA SHEET

FEDERAL REPORTING

EPA SARA Title III Section 313

Unless listed below, this product does not contain toxic chemical(s) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR part 372. EPA has advised that when a percentage range is listed the midpoint may be used to fulfill reporting obligations.

Chemical Name	CAS#	%
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WHMIS STATUS: Unless listed below, this product is not controlled under the Canadian Workplace Hazardous Materials Information System.

D2B D2A

STATE REPORTING

Proposition 65, The Safe Drinking Water and Toxic Enforcement Act of 1986:

Unless listed below, this product does not contain known levels of any chemical known to the State of California to cause cancer or reproductive harm.

Chemical Name/List	CAS	Percent
Quartz (Carcinogen)	14808-60-7	0.1 - 1
Carbon black (Carcinogen)	1333-86-4	0.1 - 1
Nickel compounds (Carcinogen)	12607-70-4	0.001 - 0.01
Benzene, ethyl- (Carcinogen)	100-41-4	0.001 - 0.01
Epichlorohydrin (Carcinogen)	106-89-8	< 10 ppm
Lead compounds (Carcinogen)		< 10 ppm
Cadmium compounds (Carcinogen)		< 10 ppm
Benzene (Carcinogen)	71-43-2	< 10 ppm
Benzene (Developmental toxin)	71-43-2	< 10 ppm
Epichlorohydrin (Male reproductive toxin)	106-89-8	< 10 ppm
Benzene (Male reproductive toxin)	71-43-2	< 10 ppm

SECTION 16: ADDITIONAL INFORMATION

This Material Safety Data Sheet is prepared to comply with the United States Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1910.1200) and the Canadian Workplace Hazardous Materials Information System (WHMIS).

Prepared by: The Global Regulatory Department

Phone: 651-236-5842

The information and recommendations set forth herein are believed to be accurate. Because some of the information is derived from information provided to Specialty Construction Brands, Inc. from its suppliers, and because Specialty Construction Brands, Inc. has no control over the conditions of handling and use, Specialty Construction Brands, Inc. makes no warranty, expressed or implied, regarding the accuracy of the data or the results to be obtained from the use thereof. The information is supplied solely for your information and consideration, and Specialty Construction Brands, Inc. assumes no responsibility for use or reliance thereon. It is the responsibility of the user of Specialty Construction Brands, Inc. products to comply with all applicable federal, state and local laws and regulations.



EMULSIONS
CONTROL
INC.

MATERIAL SAFETY DATA SHEET

PRODUCT/MATERIAL: ECO 53BC

EMERGENCY PHONE NO.

MANUFACTURER: EMULSIONS CONTROL, INC.
925 Hale Place, Suite A-7
Chula Vista, CA 91914

SPILL: 800-633-8253
OFFICE: 619-656-8899

SECTION I – MATERIAL IDENTIFICATION

TRADE NAME:	ECO 53BC	PRODUCT CODE NO:	ECO 53BC
GENERIC NAME:	Oil based demulsifier	MSDS CODE NO:	ECO 53BC
CHEMICAL NAME:	Solvent blend of surface active organic compounds	CAS REGISTRY NO:	Not registered
SYNONYMS:	Emulsion breaker	NOISH REGISTRY NO:	Not registered
CHEMICAL FAMILY:	Hydrocarbon solvents, organic acids and resins	CHEMICAL FORMULA:	Mixture/ liquid/ organic compounds

SECTION II – HAZARD IDENTIFICATION

HEALTH/PHYSICAL HAZARDS: This material is a flammable liquid, a severe eye and skin irritant. Material similar to a major component have been shown to cause skin cancer in laboratory animals.

HAZARD LISTING: Flammable Liquid, n.o.s. (Isopropanol)

OTHER: Warning Label "Flammable Liquid"

Tanks, pipes and containers retain material or material residue. Failure to exercise caution during cleaning, maintenance, repair or sampling operations can be hazardous and lead to injury. Read sections V, VIII & X.

SECTION III – HAZARDOUS INGREDIENTS & RECOMMENDED EXPOSURE LIMITS

HAZARDOUS INGREDIENTS:

1) Alcohols, ketones, esters, aliphatic and aromatic solvents

2) Surface active organic compounds (Proprietary)

RECOMMENDED EXPOSURE LIMITS

LIMIT TYPE	AMOUNT	AGENCY*
8-hr TWA	400 ppm	X(I)

None established

(i) Recommended by manufacturer

- A = ACGIH; C = CAL/OSHA; M = MSHA; O = OSHA; X = OTHER

PRODUCT/MATERIAL: ECO 53BC

SECTION VII – CHEMICAL REACTIVITY INFORMATION

STABILITY: Stable under normal conditions of storage and handling.

REACTIVITY: Reacts with strong oxidizing agents and alkaline materials.

INCOMPATIBILITY: Strong oxidizing agents, alkaline materials

HAZARDOUS REACTION/DECOMPOSITION PRODUCTS: Carbon dioxide and carbon monoxide, oxides of sulfur and nitrogen.

SECTION VIII – FIRE & EXPLOSION HAZARD INFORMATION

NFPA RATING: HEALTH: 2 FLAMMABILITY: 3 REACTIVITY: 0

FLASH POINT (METHOND): <70° F (PMCC)
FLAMMABLE LIMITS (% BY VOLUME/AIR):

FIRE POINT/AUTOIGNITION TEMP: No data
LOWER 1 **UPPER 4%**

FIRE/EXPLOSION HAZARDS: This material is a moderate fire and explosion hazard and may be ignited by an ignition source above its flash point. Vapors may travel to ignition source and flash back. Containers may explode in fire. A vapor explosion hazard indoors, outdoors or in sewers. Empty containers retain material residue and may generate vapors which can ignite and explode.

COMBUSTION PRODUCT: Carbon dioxide, carbon monoxide and water vapor. Oxides of sulfur and nitrogen.

EXTINGUISHING MEDIA: Carbon dioxide and dry chemical. Do not use water.

FIRE FIGHTING PROCEDURES: Fire fighters should wear full protective clothing and equipment, including self-contained breathing apparatus when fighting fires in enclosed spaces. Use water spray to cool containers, to dilute and disperse vapors, protect personnel, and to flush unignited spills from fire.

SECTION IX – PERSONAL PROTECTION & ENGINEERING CONTROLS

EYE & FACIAL PROTECTION: Chemical goggles are recommended to prevent eye contact. In situations where splashing may occur, splash goggles and a face shield should be worn.

SKIN PROTECTION: Impervious protective glove, long-sleeve clothing and a chemical apron are recommended to prevent skin contact (Butyl rubber or polyethylene are recommended!). Wear protective boots in situations where splashing may occur.

RESPIRATORY PROTECTION: In situations where vapor concentrations exceed the recommended exposure limits, a NIOSH-approved organic vapor cartridge respirator should be worn.

VENTILATION: Explosion-proof general mechanical ventilation or local exhaust is recommended to maintain vapor concentrations below the recommended exposure limits

OTHER: An eye wash and source of running water should be available to flush or wash the eyes and skin.

PRODUCT/MATERIAL: ECO 53BC

SECTION X – HANDLING DURING ROUTINE & NON-ROUTINE OPERATIONS

STORAGE: Store in closed containers in a cool, dry, well-ventilated area away from sources of heat and ignition and strong oxidizing agents. Containers should be electrically bonded and grounded when transferring material.

HANDLING: Use in a well-ventilated area and recommended protective equipment and clothing. Use explosion-proof tools and equipment. Avoid breathing vapors or mists and prolonged or repeated skin contact. Avoid heating above 70° F. Label all unattended containers.

MISUSE OF EMPTY CONTAINERS CAN BE HAZARDOUS. COMPLETELY DRAIN AND HAVE COMMERCIALY CLEANED BEFORE ANY REUSE. KEEP CONTAINERS CLOSED AND DO NOT USE TO STORE OR MIX ANY OTHER MATERIALS BEFORE THEY HAVE BEEN COMMERCIALY CLEANED. DO NOT CUT, WELD, DRILL, OR SUBJECT EMPTY CONTAINERS TO HEAT OR FLAMES. VAPORS MAY IGNITE AND EXPLODE.

SECTION XI – SPILL, LEAK & DISPOSAL PROCEDURES

SPILL OR LEAK PROCEDURES: Evacuate area for large spills. Remove all ignition sources and provide explosion-proof ventilation. Wear recommended protective clothing and equipment. Do not allow spills to enter sewers, streams or surface waters. Dike and contain spill. Use inert absorbent to reduce fumes and to pick up. Collect for later disposal.

DISPOSAL PROCEDURES: *DISPOSE OF IN ACCORDANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS. Empty containers should be commercially cleaned and reconditioned before reuse.*

SECTION XII – PHYSICAL DESCRIPTION & PROPERTIES

DESCRIPTION: A brown or red colored liquid with a slightly pungent odor.

MELTING POINT:	N/A	SOLUBILITY (WATER):	Negligible
BOILING POING/RANGE:	133-760° F	pH:	N/A
OVERPOINT:	N/A	SPECIFIC GRAVITY:	0.90-0.93
VAPOR PRESSURE:	65-75 mm of Hg @ 20° C	API GRAVITY:	N/A
% VOLATILE BY VOLUME:	30-50%	VISCOSITY:	N/A
VAPOR DENSITY:	Heavier than air	POUR POINT:	N/A
EVAPORATION RATE:	2.5-4 (N-Butyl Acetate=1)	OTHER:	None

MSDS CODE NO:	ECO 53BC	NEW/REVISION DATE:	February 13, 2006
PREPARED BY:	Sam Delchad, Ph.D.	DATE:	2-13-06

PRODUCT/MATERIAL: ECO 53BC

SECTION IV – HEALTH HAZARD INFORMATION

- GENERAL:** This material is a moderate eye and skin irritant.
- OCULAR/EYE:** This material is a moderate eye irritant. Contact with the liquid may cause burning, redness, swelling, eye burns and eye damage.
- DERMAL/SKIN:** This material is a skin irritant. Prolonged or repeated contact may cause burning, redness, dermatitis, blistering and skin damage.
- INHALATION/BREATHING:** Exposure to mists or to excessive concentrations of vapors generated when this material is heated may cause irritation of nose, throat and respiratory tract and signs of central nervous system depression; i.e., headache, nausea, drowsiness and dizziness.
- INGESTION/SWALLNG:** Accidentally swallowing this material may cause irritation and burning of the mouth, throat, esophagus and gastrointestinal (GI) tract.
- CHRONIC/OTHER:**
- MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:** Pre-existing skin, liver, kidney & respiratory disorders.

SECTION V – SEPCIAL HAZARDS & PRECAUTIONS

HAZAROUS DURING HON-ROUTINE OPERATIONS: Tank, pipes and containers contain material or material residue and may contain toxic, irritating, flammable or explosive vapors of high concentrations and pressures. Exposure to these vapors can cause serious physical harm or injury.

SPECIAL PRECAUTIONS & COMMENTS: Enclosed or head spaces in material tanks, pipes or containers may contain hazardous concentrations of fumes or vapors. Exercise caution and wear recommended protective equipment and clothing when opening valves or tank and container lids, entering empty tanks or during any operations such as cleaning, repair, maintenance or sampling where there is a potential for exposure to these fumes or vapors

SECTION VI – EMERGENCY & FIRST AID PROCEDURES

- ATTENTION:** IF VICTIM IS NOT BREATHING OR IF BREATHING DIFFICULTIES DEVELOP, ARTIFICIAL RESPIRATION OR OXYGEN SHOULD BE ADMINISTERED BY QUALIFIED PERSONNEL.
- OCULAR/EYE CONTACT:** Immediately flush affected eye(s) with clean water for at least 30 minutes, washing under the eyelids. Seek immediate medical assistance.
- DERMAL/SKIN CONTACT:** Immediately remove contaminated clothing. Flush contact areas with water and then thoroughly cleanse the skin by washing with soap and water. If irritation or redness develop and persist, seek medical assistance.
- INHALATION/BREATHING:** If symptoms of exposure develop, move away from source of exposure to vapors or mists. If symptoms of exposure persist, seek medical assistance.
- INGESTION/SWALLING:** If victim is conscious and alert, have them rinse mouth with water and then drink milk or water. Seek medical assistance.
- COMMENTS/PHYSICIAN INFO:** This material is a viscous petroleum solvent-based mixture of organics, acids, resins and amines which is moderately to severely irritating to the skin, eyes and mucous membranes.

Material Safety Data Sheet

PRODUCT NAME:

QTX-102

Revision Date: April 26, 1996

(b) (4)



(b) (4)



(b) (4)



(b) (4)



3

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **ZINC BROMIDE**

Revision Date: 23-Jan-2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: ZINC BROMIDE

Synonyms: None.

Chemical Family: Metal Bromide

Application: Additive

Manufacturer/Supplier: Baroid Drilling Fluids
a Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335.

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Zinc bromide.	7699-45-8	60 - 100%	Not applicable.	Not applicable.

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory burns. May cause allergic skin reaction. May be harmful if swallowed.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable.

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined.
Flash Point/Range (C):	Not Determined.
Flash Point Method:	Not Determined.
Autoignition Temperature (F):	Not Determined.
Autoignition Temperature (C):	Not Determined.
Flammability Limits in Air - Lower (%):	Not Determined.
Flammability Limits in Air - Upper (%):	Not Determined.

Fire Extinguishing Media All standard firefighting media.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 3, Flammability 0, Reactivity 0
HMIS Ratings: Flammability 0, Reactivity 0, Health 3

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store in a cool, dry location. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Dust/mist respirator. (95%)

Hand Protection Impervious rubber gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Powder
Color:	Colorless to white
Odor:	Odorless
pH:	4
Specific Gravity @ 20 C (Water=1):	4.22
Density @ 20 C (lbs./gallon):	Not Determined.

ZINC BROMIDE
Page 2 of 6

9. PHYSICAL AND CHEMICAL PROPERTIES

Bulk Density @ 20 C (lbs/ft3):	Not Determined.
Boiling Point/Range (F):	Not Determined.
Boiling Point/Range (C):	Not Determined.
Freezing Point/Range (F):	Not Determined.
Freezing Point/Range (C):	Not Determined.
Vapor Pressure @ 20 C (mmHg):	Not Determined.
Vapor Density (Air=1):	Not Determined.
Percent Volatiles:	Not Determined.
Evaporation Rate (Butyl Acetate=1):	Not Determined.
Solubility in Water (g/100ml):	Miscible
Solubility in Solvents (g/100ml):	Not Determined.
VOCs (lbs./gallon):	Not Determined.
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined.
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined.
Partition Coefficient/n-Octanol/Water:	Not Determined.
Molecular Weight (g/mole):	225.21

10. STABILITY AND REACTIVITY

Stability Data:	Stable.
Hazardous Polymerization:	Will Not Occur.
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Potassium. Sodium.
Hazardous Decomposition Products	Hydrogen bromide. Toxic fumes.
Additional Guidelines	Not Applicable.

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	Causes severe respiratory irritation.
Skin Contact	Causes severe skin irritation. May cause skin burns on prolonged contact.
Eye Contact	Causes severe eye irritation May cause eye burns.
Ingestion	Causes burns of the mouth, throat and stomach. May cause headache, dizziness, nausea, vomiting, gastrointestinal irritation and central nervous system depression.
Aggravated Medical Conditions	Central nervous system disorders.
Chronic Effects/Carcinogenicity	May cause bromism characterized by disturbances of the central nervous system, skin and digestive tract. May cause birth defects.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: 1470 mg/kg (Rat)
Dermal Toxicity:	Not determined.
Inhalation Toxicity:	Not determined.

Primary Irritation Effect: Not determined.
Carcinogenicity Not determined.
Genotoxicity: Not determined.
Reproductive / Developmental Toxicity: Not determined.

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air) Not determined.
Persistence/Degradability Not determined.
Bio-accumulation Not Determined.

Ecotoxicological Information

Acute Fish Toxicity: Not determined.
Acute Crustaceans Toxicity: Not determined.
Acute Algae Toxicity: Not determined.

Chemical Fate Information Not determined.
Other Information Not applicable.

13. DISPOSAL CONSIDERATIONS

Disposal Method Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Corrosive Solid, Acidic, Inorganic, N.O.S., 8, UN3260, II
(Contains Zinc Bromide), Marine Pollutant
RQ (Zinc Bromide - 454 kg.)
NAERG 154

Canadian TDG

Corrosive Solid, Acidic, Inorganic, N.O.S.(Contains Zinc Bromide), 8, UN3260, II, Marine Pollutant

ADR

UN3260, Corrosive Solid, Acidic, Inorganic, N.O.S.(Contains Zinc Bromide), 8, II, Marine Pollutant

Air Transportation

ICAO/IATA

UN3260, Corrosive Solid, Acidic, Inorganic, N.O.S., 8, II
(Contains Zinc Bromide Mixture), Marine Pollutant
RQ (Zinc Bromide - 454 kg.)

Sea Transportation

IMDG

Corrosive Solid, Acidic, Inorganic, N.O.S. (Contains Zinc Bromide), 8, UN3260, II
, Marine Pollutant
RQ (Zinc Bromide - 454 kg.)
EmS F-A, S-B

Other Shipping Information

Labels: Corrosive
Marine Pollutant

15. REGULATORY INFORMATION**US Regulations**

US TSCA Inventory All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances Not applicable.

EPA SARA (311,312) Hazard Class Acute Health Hazard
Chronic Health Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity For This Product EPA Reportable Spill Quantity is 1000 Pounds based on Zinc bromide (CAS: 7699-45-8)

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law Does not apply.

NJ Right-to-Know Law Does not apply.

PA Right-to-Know Law Does not apply.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable.

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

EASTMAN

MATERIAL SAFETY DATA SHEET

Revision Date: 11/15/2004

MSDSUSA/ANSI/EN/150000000343/Version 4.0

T, deport -C
#1087
Defergent-
Hot wash
Clean Run
Dry
Dory

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Name	Eastman(TM) Solvent R
Product Identification Number(s)	02860-00, P0286000, P0286001, E0286001
Manufacturer/Supplier	Eastman Chemical Company 200 South Wilcox Drive Kingsport, TN 37660-5280 US +14232292000
MSDS Prepared by	Eastman Product Safety and Health
Chemical Name	not applicable
Synonym(s)	02860-00 446320
Molecular Formula	not applicable
Molecular Weight	not applicable
Product Use	solvent
OSHA Status	hazardous

For emergency health, safety & environmental information, call 800-EASTMAN.

For emergency transportation information, call CHEMTREC at 800-424-9300 or call 800-EASTMAN.

2. COMPOSITION INFORMATION ON INGREDIENTS

(Typical composition is given, and it may vary. A certificate of analysis can be provided, if available.)

Weight %	Component	CAS Registry No.
80%	hydrocarbon C9-C12	not available
15%	hydrocarbon C14-16	not available
5%	hydrocarbon C18-C20	not available

3. HAZARDS IDENTIFICATION

WARNING!

PROLONGED OR REPEATED SKIN CONTACT MAY CAUSE DRYING, CRACKING, OR IRRITATION
COMBUSTIBLE LIQUID AND VAPOR
HIGH VAPOR CONCENTRATIONS MAY CAUSE DROWSINESS

HMIS® Hazard Ratings: Health - 2, Flammability -2, Chemical Reactivity - 0

HMIS® rating involves data interpretations that may vary from company to company. They are intended only for rapid, general identification of the magnitude of the specific hazard. To deal adequately with the safe handling of this material, all the information contained in this MSDS must be considered.

4. FIRST-AID MEASURES

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Inhalation: If symptomatic, move to fresh air. Get medical attention if symptoms persist.

Eyes: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. Get medical attention if symptoms persist.

Skin: Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Ingestion: Seek medical advice.

5. FIRE FIGHTING MEASURES

Extinguishing Media: water spray, dry chemical, carbon dioxide, foam

Special Fire-Fighting Procedures: Wear self-contained breathing apparatus and protective clothing.

Use water spray to keep fire-exposed containers cool. USE WATER WITH CAUTION. Water may be ineffective in fighting the fire. Material will float and may ignite on surface of water. The fire could easily be spread by the use of water in an area where the water could not be contained.

Hazardous Combustion Products: carbon dioxide, carbon monoxide

Unusual Fire and Explosion Hazards: Combustible.

6. ACCIDENTAL RELEASE MEASURES

Wear appropriate personal protective equipment. Eliminate all ignition sources. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste.

For Large Spills: Flush spill area with water spray. Prevent runoff from entering drains, sewers, or streams. Dike for later disposal.

7. HANDLING AND STORAGE

Personal Precautionary Measures: Avoid breathing high vapor concentrations. Avoid contact with eyes, skin, and clothing. Do not taste or swallow. Use only with adequate ventilation. Wash thoroughly after handling.

Prevention of Fire and Explosion: Keep away from heat, sparks, and flame. Keep from contact with oxidizing materials.

Storage: Keep container tightly closed.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Country specific exposure limits have not been established or are not applicable unless listed below.

Ventilation: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust

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ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Respiratory Protection: If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Respirator type: Air-purifying respirator with an appropriate, government approved (where applicable), air-purifying filter, cartridge or canister. Contact health and safety professional or manufacturer for specific information.

Eye Protection: It is a good industrial hygiene practice to minimize eye contact.

Skin Protection: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Recommended Decontamination Facilities: safety shower, washing facilities, eye bath

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical Form: liquid

Color: light yellow

Odor: hydrocarbon

Specific Gravity: 0.93

Boiling Point: 177 - 368 °C

Solubility in Water: negligible

Flash Point: 41 °C (Tag open cup)

Thermal Decomposition Temperature: Thermal stability not tested. Low stability hazard expected at normal operating temperatures.

10. STABILITY AND REACTIVITY

Stability: Not fully evaluated. Materials containing similar structural groups are normally stable.

Incompatibility: Material reacts with strong oxidizing agents.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

12. ECOLOGICAL INFORMATION

Acute toxicity data, if available, are listed below. Additional toxicity data may be available on request.

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This material has not been tested for environmental effects.

13. DISPOSAL CONSIDERATIONS

Discharge, treatment, or disposal may be subject to national, state, or local laws. Incinerate. Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. TRANSPORT INFORMATION

Important Note: Shipping descriptions may vary based on mode of transport, quantities, package size, and/or origin and destination. Consult your company's Hazardous Materials/Dangerous Goods expert for information specific to your situation.

DOT (USA)

Class combustible liquid, Packing group III for quantities of 450 liters (119 gallons) or more; not regulated for smaller quantities

Possible Shipping Description(s):

not regulated

Hydrocarbons, liquid, n.o.s.
combustible liquid (OIL) UN 3295 III

Sea - IMDG (International Maritime Dangerous Goods)

Possible Shipping Description(s):

HYDROCARBONS, LIQUID, N.O.S.
3 UN 3295 III

Air - ICAO (International Civil Aviation Organization)

Possible Shipping Description(s):

Hydrocarbons, liquid, n.o.s.
3 UN 3295 III

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15. REGULATORY INFORMATION

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

WHMIS (Canada) Status: controlled

WHMIS (Canada) Hazard Classification: B/3, D/2/B

SARA 311-312 Hazard Classification(s):

immediate (acute) health hazard

fire hazard

SARA 313: none, unless listed below

Carcinogenicity Classification (components present at 0.1% or more): none, unless listed below

TSCA (US Toxic Substances Control Act): All components of this product are listed on the TSCA inventory. Any impurities present in this product are exempt from listing.

16. OTHER INFORMATION

Visit our website at www.EASTMAN.com or call 001-423-229-2000.

The information contained herein is based on current knowledge and experience; no responsibility is accepted that the information is sufficient or correct in all cases. Users should consider these data only as a supplement to other information. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment.

Highlighted areas indicate new or changed information.

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EPAHQ011000219



Material Safety Data Sheet

(USA) CHEMTREC : 1(800) 424-9300 (24hrs)
(CAN) CANUTEC : 1(613) 996-6666 (24hrs)
(USA) Anachemia : 1(518) 297-4444
(CAN) Anachemia : 1(514) 489-5711

Section I. Product Identification and Uses												
Product name	DODECYL ALCOHOL	<table><tr><td>CI#</td><td>Not available.</td></tr><tr><td>CAS#</td><td>112-53-8</td></tr><tr><td>Code</td><td>AC-3934</td></tr><tr><td>Formula weight</td><td>186.34</td></tr><tr><td>Supersedes</td><td></td></tr></table>	CI#	Not available.	CAS#	112-53-8	Code	AC-3934	Formula weight	186.34	Supersedes	
CI#	Not available.											
CAS#	112-53-8											
Code	AC-3934											
Formula weight	186.34											
Supersedes												
Chemical formula	CH ₃ (CH ₂) ₁₁ OH											
Synonyms	1-Dodecanol, Lauryl alcohol, AC-3934, 36984											
Supplier	Anachemia Canada. 255 Norman. Lachine (Montreal), Que H8R 1A3											
Material uses	For laboratory use only.											

Name	CAS #	%	TLV
1) DODECYL ALCOHOL	112-53-8	98	Not established by ACGIH

DODECYL ALCOHOL:
 ORAL (LD50): Acute: 4150 mg/kg (Rat). 1170 mg/kg (Mouse).
 DERMAL (LD50): Acute: >10 ml/kg (Guinea pig).
 INTRAVENOUS (LD50): Acute: 390 mg/kg (Rat).

Section III. Physical Data

DODECYL ALCOHOL

page 2/4

Physical state and appearance / Odor	Moist white solid.
pH (1% soln/water)	Not applicable.
Odor threshold	Not available.
Percent volatile	Not available.
Freezing point	24 to 27°C
Boiling point	260 to 262°C
Specific gravity	0.82 (Water = 1)
Vapor density	7.4 (Air = 1)
Vapor pressure	0.1 mm of Hg (@ 20°C)
Water/oil dist. coeff.	Not available.
Evaporation rate	Not available.
Solubility	Insoluble in cold water.

Section IV. Fire and Explosion Data

Flash point	CLOSED CUP: >109°C
Flammable limits	LOWER: 0.6% UPPER: 4%
Auto-ignition temperature	259°C
Fire degradation products	Oxides of carbon (CO, CO ₂).
Fire extinguishing procedures	Use DRY chemical, carbon dioxide, or foam. Water or foam may cause frothing. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode.
Fire and Explosion Hazards	The sensitivity to static discharge is not available. The sensitivity to impact is not available. When heated to decomposition it emits acrid smoke and fumes.

Section V. Toxicological Properties

Routes of entry	Ingestion and inhalation. Eye contact. Skin contact. Skin absorption.
Effects of Acute Exposure	Harmful by ingestion, inhalation or skin absorption. Irritant.
Eye	Causes severe irritation.
Skin	Causes skin irritation.
Inhalation	Material is irritating to mucous membranes and upper respiratory tract.
Ingestion	No specific information is available on this material.

Section V. Toxicological Properties

DODECYL ALCOHOL

page 3/4

Effects of Chronic Overexposure

Carcinogenic effects: Not available. Mutagenic effects: Not available. Teratogenic effects: Not available. Toxicity of the product to the reproductive system: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

Section VI. First Aid Measures**Eye contact**

Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Call a physician.

Skin contact

Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reusing.

Inhalation

Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Call a physician.

Ingestion

If conscious, wash out mouth with water. Never give anything by mouth to an unconscious or convulsing person. Call a physician.

Section VII. Reactivity Data**Stability**

Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.

Hazardous decomp. products

Not available.

Incompatibility

Oxidizing agents, bases, acids, acid anhydrides, acid chlorides, halogens, acetaldehyde, ethylene oxide, hexamethylene diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum hydride, nitrogen tetroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum.

Reaction Products

Not available. Hazardous polymerization will not occur.

Section VIII. Preventive Measures

DODECYL ALCOHOL

page 4/4

Protective Clothing in case of spill and leak Wear respirator, chemical safety goggles, rubber boots and heavy rubber gloves.

Spill and leak Evacuate the area. Eliminate all sources of ignition. Absorb on sand or vermiculite and place in a closed container for disposal. Avoid raising dust. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch damaged container or spilled material.

Waste disposal Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an after burner and scrubber. According to all applicable regulations.

Storage and Handling Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe dust. Keep container tightly closed and dry. Manipulate in a well ventilated area or under an adequate fume hood. Avoid raising dust. Empty containers may contain a hazardous residue. Handle and open container with care. Minimize dust generation and exposure - use dust mask or appropriate protection. Take off immediately all contaminated clothing. This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling.

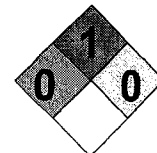
Section IX. Protective Measures

Protective clothing Splash goggles. Impervious rubber gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. A OSHAMSHA jointly approved respirator is advised in the absence of proper environmental controls. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls Local mechanical exhaust ventilation capable of minimizing dust emissions at the point of use. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or comments Harmful solid! Irritant! Do not breathe dust. Avoid all contact with the product. Avoid prolonged or repeated exposure. Manipulate in a well ventilated area or under an adequate fume hood. Keep away from heat, sparks and flame. Handle and open container with care. Container should be opened only by a technically qualified person.
RTECS NO: JR5775000 (Dodecyl alcohol).



NFPA

Prepared by MSDS Department/Département de F.S..

Validated 10-Mar-2005

) Telephone# (514) 489-5711

While the company believes the data set forth herein are accurate as of the date hereof, the company makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.

EPAHO011000223

EC safety data sheet

Trade name: Di-sec-butylamine

Status: 12.02.2003

subst.code: 36748

Version : 5 / Def

Date of printing : 07.03.2003

Product no.: IVTP005

1.) Identification of the substance/preparation and company**Product details**

Trade name

Di-sec-butylamine

Use

chemical intermediates (including monomers)

Identification of the manufacturer / supplier

Address

Celanese Chemicals Europe GmbH
Frankfurter Straße 111
D-61476 Kronberg/Ts.

Information provided by / telephone

EHSA Europe FAX-Nr.: +49 (0) 208 693 2053

Emergency telephone +49 (0) 69-305 6418
number**2.) Composition / information on ingredients**

Chemical characterization

Di-(1-methylpropyl) amine

Substance / product identification

CAS no.	626-23-3	Index no.	612-049-00-0
EINECS no.	210-937-9	ELINCS number :	

Hazardous ingredients

Di-sec-butylamine

CAS no.	626-23-3		
EINECS no.	210-937-9		
Concentration	>= 98,5	%-b.w.	%-b.w.
Classification	R10		
	Xn;R20/21/22		

3.) Hazards possibilities

Hazard symbols

F	Highly flammable
T	Toxic

R phrases

11	Highly flammable.
20/22	Harmful by inhalation and if swallowed.
24	Toxic in contact with skin.
35	Causes severe burns.

Trade name: Di-sec-butylamine
subst.code: 36748
Product no.: IVTP005

Version : 5 / Def

Status: 12.02.2003
Date of printing : 07.03.2003

4.) First aid measures

General Information

Remove contaminated clothing immediately and dispose of safely.

After inhalation

When inhaled remove to fresh air and seek medical aid.

After skin contact

Rinse affected skin for at least ten minutes with cold water, then bathe in 3% acetic acid for 30 minutes.
Treat wounds like burn wounds. Immediate medical treatment necessary, as untreated burns can result in slow-healing wounds

After eye contact

In case of contact with eyes rinse thoroughly with plenty of lukewarm water and seek medical advice

After ingestion

Summon a doctor immediately.

Advice to doctor

Symptoms

Shortness of breath; Convulsions; Coughing; hypertensive effect

Hazards

Risk of stomach perforation; Risk of pulmonary oedema

Treatment

Symptoms appear mostly after several hours. If swallowed, flush stomach; Continue to monitor for pneumonia and pulmonary oedema. Treat skin and mucous membranes with antihistamines and corticosteroid preparations. In the event of pulmonary irritation treat initially with dexamethasone - dosing aerosol.

5.) Fire-fighting measures

Suitable extinguishing media

Foam; Dry powder; Carbon dioxide; Water spray jet

Extinguishing media that must not be used for safety reasons

strong water jet

Special exposure hazards arising from the substance or preparation itself, its combustion products or from resulting gases

In case of fires, hazardous combustion gases are formed: Carbon monoxide (CO). Carbon dioxide (CO₂); Nitrous gases (NO_x); Combustion gases of organic materials must in principle be graded as inhalation poisons.

Special protective equipment for firefighting

Use self-contained breathing apparatus.

Other information (chapter 5.)

Cool endangered environment with water spray jet.

6.) Accidental release measures

Personal precautions

Avoid contact with eyes and skin. Keep away sources of ignition. Ensure adequate ventilation.

Environmental precautions

Prevent spread over a wide area (e.g. by containment or oil barriers). Do not discharge into the drains/surface waters/groundwater.

EC safety data sheet



Trade name: Di-sec-butylamine

Status: 12.02.2003

subst.code: 36748

Version : 5 / Def

Date of printing : 07.03.2003

Product no.: IVTP005

Methods for cleaning up/taking up

Pick up with absorbent material (eg sand, kieselgur, acid binder, universal binder, sawdust). Dispose of contaminated material as prescribed

7.) Handling and storage

Handling

Advice on safe handling

Provide good ventilation of working area (local exhaust ventilation if necessary). Transfer and handle only in enclosed systems.

Advice on protection against fire and explosion

Keep away from sources of ignition - refrain from smoking. Take precautionary measures against static charges. In case of fire, emergency cooling with water spray should be available

Temperature class

T2

Use

Agrochemicals

Storage

Hints on storage assembly

Keep in cool, well ventilated place away from acids; Do not store with strong oxidizing agents.

Further information on storage conditions

Keep container tightly closed. Store under nitrogen

8.) Exposure controls / personal protection

Ingredients with occupational exposure limits to be monitored

None

Personal protective equipment

Respiratory protection

filter apparatus, filter A; Full mask with above mentioned filter according to producers using requirements or self-contained breathing apparatus.

Hand protection

Chemical resistant gloves

Appropriate Material

Type

Nitrile rubber

Fleximax (Company COMASEC) or comparable article; or refer to glove producer recommendation.

according to EN 374: level 6

evaluation

Material thickness

appr. 0,55

mm

Time for permeation

> 480

min

Chemical resistant gloves

Appropriate Material

Type

PVC

Strongoflex Double Dip (Company NorthChem) or comparable article; or refer to glove producer recommendation.

evaluation

Material thickness

appr. 0,8

mm

Eye protection

Tightly fitting safety glasses

EC safety data sheet

Trade name: Di-sec-butylamine

Status: 12.02.2003

subst.code: 36748

Version : 5 / Def

Date of printing : 07.03.2003

Product no.: IVTP005

Skin protection

protective clothing

General protective and hygiene measures

Contact with eyes and skin must be avoided; Do not inhale vapours. Hold emergency shower available.

Hygienic measures

Do not eat, drink or smoke during work time. Remove soiled or soaked clothing immediately. Wash hands before breaks and after work. Clean skin thoroughly after work; apply skin cream.

9.) Physical and chemical properties**Appearance**

Form	liquid
Colour	colourless
Odour	amine-like

Safety data**Changes in physical state**

type	Melting temperature
Value	< -60

Changes in physical state

type	Boiling temperature
Value	134
Pressure	1013 hPa

Flash point

Value	20 °C
Method	DIN 51755

Ignition temperature

Value	320 °C
Method	DIN 51794

Vapour pressure

Value	appr. 14		hPa
Reference temperature	20	°C	
Method	calculated		
Value	appr. 60		hPa
Reference temperature	50	°C	
Method	calculated		

Density

Value	0.753		g/cm³
Method	DIN 51757		
Reference temperature	20	°C	

Viscosity

type	dynamic		
Value	1.2		mPa*s
Reference temperature	20	°C	

Solubility in water

Value	7		g/l
Reference temperature	20	°C	

EC safety data sheet



Trade name: Di-sec-butylamine
subst.code: 36748
Product no.: IVTP005

Version : 5 / Def

Status: 12.02.2003
Date of printing : 07.03.2003

pH value

Value	appr.	11.5	
Reference temperature		20	°C
Concentration	7		g/l

Octanol/water partition coefficient (log Pow)

Value	2,2
Method	Calculation Hansch/Leo

Other information (chapter 9.)

Incompatible substances: Acids.

10.) Stability and reactivity

Hazardous decomposition products None

Hazardous reactions Reactions with acids and strong oxidising agents.

Thermal decomposition

Remarks No decomposition if used as prescribed.

11.) Toxicological information

Acute toxicity

Acute oral toxicity

LD50	308	mg/kg
Species	rat	

Acute dermal toxicity

LD50	200 - 400	mg/kg
Species	rabbit	

Irritant/corrosive effects

Irritant effect on skin

Species	rabbit
evaluation	strongly corrosive

Irritant effect on eyes

Species	rabbit eye
evaluation	strongly corrosive

Other information

Serious toxic effects are possible in case of contact with large areas of skin; Symptoms of poisoning may only appear after several hours

12.) Ecological information

Data on elimination (persistence and degradability)

Biodegradability

Value	< 30
Method	OECD 302 B
evaluation	not readily degradable

EC safety data sheet



Trade name: Di-sec-butylamine
subst.code: 36748
Product no.: IVTP005

Version : 5 / Def

Status: 12.02.2003
Date of printing : 07.03.2003

Ecotoxic effects

Fish toxicity

LC50	appr. 80	mg/l
Species	zebra fish	
Duration of exposure	96	h
Method	OECD 203	

Bacteria toxicity

EC0	500	mg/l
Species	activated sludge	
Method	fermentation tube test	

General information / ecology

Remarks Do not discharge product unmonitored into the environment.

13.) Disposal considerations

Product

Disposal required in compliance with all waste management related local regulations.
The choice of the appropriate method of disposal depends on the product composition by the time of disposal as well as the local statutes and possibilities for disposal.

Uncleaned packaging

Contaminated packaging should be emptied as far as possible and after appropriate cleansing may be taken for reuse.

14.) Transport information

Land transport ADR/RID

UN number	2733
Technical name	Amines, flammable, corrosive, n.o.s.
Danger releasing substance	(Di-sec-butylamine)
Class	3
Packaging group	II
Hazard no.	338

Inland waterways transport ADNR

Regulatory information	ADNR: Container -Ship and Tanker
UN number	2733
Technical name	Amines, flammable, corrosive, n.o.s.
Danger releasing substance	(Di-sec-butylamine)
Class	3
Packaging group	II

Marine transport IMDG

UN number	2733
Propper shipping name	Amines, flammable, corrosive, n.o.s.
Danger releasing substance	(Di-sec-butylamine)
Class	3
Packaging group	II
EmS	3-02 (Amdt 30-00) F-E, S-C (Amdt 31-02)

EC safety data sheet



Trade name: Di-sec-butylamine
subst.code: 36748
Product no.: IVTP005

Version : 5 / Def

Status: 12.02.2003
Date of printing : 07.03.2003

Air transport ICAO/IATA

UN number	2733
Propper shipping name	Amines, flammable, corrosive, n.o.s.
Danger releasing substance	(Di-sec-butylamine)
Class	3
Packaging group	II

Dispatch by post
Not permitted

15.) Regulatory information

Hazardous component(s) to be indicated on label

Di-sec-butylamine

Labelling in accordance with EC directives

» "EC-labelling"

Hazard symbols

Xn Harmful

R phrases

10	Flammable.
20/21/22	Harmful by inhalation, in contact with skin and if swallowed.

Water Hazard Class (Ger.)

» Class 1
» Source Classification according to VwVwS, Annex 3

16.) Other information

Other information

Observe national and local legal requirements

R phrases

Di-sec-butylamine

10	Flammable.
20/21/22	Harmful by inhalation, in contact with skin and if swallowed.

This information is based on our present state of knowledge. It shall describe our products regarding safety requirements and shall not be construed as a guarantee or statement of condition and/or quality.

Material Safety Data Sheet

Airgas

Dipropylene Glycol

Section 1. Chemical product and company identification

Product Name : Dipropylene Glycol
Supplier : AIRGAS INC., on behalf of its subsidiaries
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253
Synonym : dipropylene glycol
MSDS# : 001111
Date of Preparation/Revision : 9/27/2006.
In case of emergency : 1-866-734-3438

Section 2. Hazards identification

Physical state : Liquid.
Emergency overview : Warning!
CAUSES DAMAGE TO THE FOLLOWING ORGANS: SKIN, EYES.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.
Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation.
Potential acute health effects
_yes : May cause severe eye irritation.
Skin : This product may irritate skin upon contact.
Inhalation : Harmful by inhalation.
Ingestion : Harmful if swallowed.
Potential chronic health effects : **CARCINOGENIC EFFECTS** Not available.
MUTAGENIC EFFECTS Not available.
TERATOGENIC EFFECTS Not available.
Medical conditions aggravated by overexposure : Repeated or prolonged exposure is not known to aggravate medical condition.
See toxicological Information (section 11)

Section 3. Composition, Information on Ingredients

United States

propanol, oxybis-

25265-71-8 100

Exposure limits

Section 4. First aid measures

Eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.
Skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.
Inhalation : If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Get medical attention.
Ingestion : Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Dipropylene Glycol

Section 5. Fire fighting measures

- Flammability of the product** : May be combustible at high temperature.
- Auto-ignition temperature** : 310°C (590°F)
- Products of combustion** : These products are carbon oxides (CO, CO₂).
- Fire hazards in presence of various substances** : Highly flammable in presence of heat.
- Fire fighting media and instructions** : In case of fire, use water spray (fog), foam, dry chemicals, or CO₂.
- Combustible liquid and vapor. Vapor may cause flash fire. Vapors may accumulate in low or confined areas, travel considerable distance to source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.
- Special protective equipment for fire-fighters** : Fire fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full facepiece operated in positive pressure mode.

Section 6. Accidental release measures

- Personal precautions** : Immediately contact emergency personnel. Eliminate all ignition sources. Keep unnecessary personnel away. Use suitable protective equipment (Section 8). Do not touch or walk through spilled material.
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
- Methods for cleaning up** : If emergency personnel are unavailable, contain spilled material. For small spills add absorbent (soil may be used in the absence of other suitable materials) and use a non-sparking or explosion proof means to transfer material to a sealed, appropriate container for disposal. For large spills dike spilled material or otherwise contain material to ensure runoff does not reach a waterway. Place spilled material in an appropriate container for disposal.

Section 7. Handling and storage

- Handling** : Keep container closed. Use only with adequate ventilation. Keep away from heat, sparks and flame. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.
- Storage** : Store in a segregated and approved area. Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Avoid all possible sources of ignition (spark or flame).

Section 8. Exposure Controls, Personal Protection

- Engineering controls** : Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves or gauntlets complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Personal protection in case of a large spill** : Splash goggles. Full suit. Boots. Gloves. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.
- Product name** : **Exposure limits**

Dipropylene Glycol

United States

propanol, oxybis-

Section 9. Physical and chemical properties

Physical state	: Liquid.
Color	: Colorless.
Odor	: Odorless.
Molecular weight	: 134.2 g/mole
Molecular formula	: C ₆ -H ₁₄ -O ₃
Boiling/condensation point	: 228°C (442.4°F)
Melting/freezing point	: -40°C (-40°F)
Specific gravity	: 1.02 (Water = 1)
Evaporation rate	: <0.01 compared to Butyl acetate.

Section 10. Stability and reactivity

Stability and reactivity	: The product is stable.
Incompatibility with various substances	: Reactive with oxidizing agents.

Section 11. Toxicological information

<u>Ingredient name</u>	<u>Test</u>	<u>Result</u>	<u>Route</u>	<u>Species</u>
propanol, oxybis-	LD50	14850 mg/kg	Oral	Rat

Chronic effects on humans : Causes damage to the following organs: skin, eyes.

Other toxic effects on humans : Not considered to be toxic for humans.

Specific effects

Carcinogenic effects	: No known significant effects or critical hazards.
Mutagenic effects	: No known significant effects or critical hazards.
Reproduction toxicity	: No known significant effects or critical hazards.

Section 12. Ecological information

Products of degradation	: These products are carbon oxides (CO, CO ₂) and water.
Toxicity of the products of biodegradation	: The product itself and its products of degradation are not toxic.




Section 13. Disposal considerations

Waste disposal	: The generation of waste should be avoided or minimized wherever possible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
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Consult your local or regional authorities.

Section 14. Transport information

Dipropylene Glycol

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-

Section 15. Regulatory information**United States**

- HCS Classification** : Combustible liquid
Target organ effects
- U.S. Federal regulations** : TSCA 8(b) inventory: propanol, oxybis-
SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: No products were found.
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: No products were found.
Clean Water Act (CWA) 307: No products were found.
Clean Water Act (CWA) 311: No products were found.
Clean air act (CAA) 112 accidental release prevention: No products were found.
Clean air act (CAA) 112 regulated flammable substances: No products were found.
Clean air act (CAA) 112 regulated toxic substances: No products were found.
- State regulations** : Pennsylvania RTK: propanol, oxybis-: (generic environmental hazard)

Canada

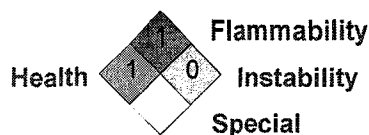
- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
CEPA DSL: propanol, oxybis-

Section 16. Other information

- Label Requirements** : CAUSES DAMAGE TO THE FOLLOWING ORGANS: SKIN, EYES.
COMBUSTIBLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FIRE.

Hazardous Material Information System (U.S.A.)

Health	*	1
Fire hazard		1
Reactivity		0
Personal protection		A

National Fire Protection Association (U.S.A.)

Dipropylene Glycol

Notice to reader

the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Material Safety Data Sheet

Di-n-butylamine

MSDS# 06410

Section 1 - Chemical Product and Company Identification

MSDS Name:

Di-n-butylamine

Catalog Numbers:

11295-5000, D/1338/07, D/1338/PB07, D/1340/08, D/1340/PB08

Synonyms:

N-Butyl-1-butanamine; Di-n-butylamine; secondary alkyl amine.

Company Identification: Fisher Scientific UK

Bishop Meadow Road, Loughborough

Leics. LE11 5RG

For information in Europe, call: (01509) 231166

Emergency Number, Europe: 01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 111-92-2

Chemical Name: Di-n-butylamine

%: 99

EINECS#: 203-921-8

Hazard Symbols:

C

Risk Phrases:

R 20/21/22 34

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable. Harmful by inhalation, in contact with skin and if swallowed. Causes burns.

Potential Health Effects

Eye:

Causes eye burns.

Skin:

Harmful if absorbed through the skin. Causes skin burns.

Ingestion:

Harmful if swallowed. Causes gastrointestinal tract burns.

Inhalation:

Harmful if inhaled. Causes chemical burns to the respiratory tract.

Chronic:

Chronic exposure may cause effects similar to those of acute exposure.

Section 4 - First Aid Measures

Eyes:

Get medical aid immediately. Immediately flush eyes with plenty of water for at least 15 minutes.

Skin:

Get medical aid immediately. Rinse area with large amounts of water for at least 15 minutes.

Ingestion:

Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Get medical aid immediately.

Inhalation:

Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing has ceased apply artificial respiration using oxygen and suitable mechanical device such as a bag and a mask.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media:

Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Avoid runoff into storm sewers and ditches which lead to waterways. Provide ventilation. Approach spill from upwind. Use water spray to cool and disperse vapors and protect personnel.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Do not get in eyes, on skin, or on clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Do not ingest or inhale. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Keep away from heat, sparks and flame.

Storage:

Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 111-92-2:

Germany: 5 ppm TWA (exposure factor 1); 29 mg/m³ TWA (exposure factor 1)

Germany: skin notation

Personal Protective Equipment

Eyes:

Wear chemical splash goggles and face shield.

Skin:

Wear appropriate gloves to prevent skin exposure.

Clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: clear, colorless
Odor: amine-like - malodorous
pH: 12.2 (0.1M aq soln)
Vapor Pressure: 2.59 mm Hg @ 25 deg C
Viscosity: 0.9 mPa s 20 C
Boiling Point: 159 deg C (318.20F)
Freezing/Melting Point: -62 deg C (-79.60F)
Autoignition Temperature: 260 deg C (500.00 deg F)
Flash Point: 39 deg C (102.20 deg F)
Explosion Limits: Lower: .60
Explosion Limits: Upper: 6.80
Decomposition Temperature: Not available
Solubility in water: Slightly soluble
Specific Gravity/Density: 0.76
Molecular Formula: C8H19N
Molecular Weight: 129.24

Section 10 - Stability and Reactivity

Chemical Stability:

Stable under normal temperatures and pressures. Amines absorb carbon dioxide from the air to form carbamate salts.

Conditions to Avoid:

Ignition sources.

Incompatibilities with Other Materials

Strong oxidizing agents, strong acids.

Hazardous Decomposition Products

Nitrogen oxides, carbon monoxide, carbon dioxide.

Hazardous Polymerization

Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 111-92-2: HR7780000

LD50/LC50:

RTECS: CAS# 111-92-2: Oral, mouse: LD50 = 290 mg/kg;

Oral, rat: LD50 = 189 mg/kg; Skin, rabbit: LD50 = 770 mg/kg;

Other: Inhalation, rats LC50: > 2.0 mg/l/1H (Mortality was not observed.) Air Products & Chemicals; Inhalation, rats LC50: > 573 ppm/1H (Mortality was not observed.) Huntingdon Research Centre; Inhalation, rats LC50: 1.15 mg/l/4H. Huntingdon Research Centre.

Carcinogenicity:

Di-n-butylamine -

Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other:

See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

IATA

Shipping Name: Di-n-BUTYLAMINE
Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

IMO

Shipping Name: DI-n-BUTYLAMINE
Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

RID/ADR

Shipping Name: DI-n-BUTYLAMINE
Hazard Class: 8 (3)
UN Number: 2248
Packing Group: II

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: C

Risk Phrases:

R 10 Flammable.

R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.

R 34 Causes burns.

Safety Phrases:

S 23 Do not inhale gas/fumes/vapour/spray.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 28 After contact with skin, wash immediately with...

S 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 111-92-2: 1

Section 16 - Other Information

MSDS Creation Date:

12/12/1997

Revision #7 Date

5/16/2007

Section 16 - Other Information

MSDS Creation Date:

12/12/1997

Revision #7 Date

5/16/2007

Revisions were made in Sections:

2, 3, 14

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

Material Safety Data Sheet

Diisopropylbenzene (Tech), 98% (GC)

SDS# 31799

Section 1 - Chemical Product and Company Identification

MSDS Name:

Diisopropylbenzene (Tech), 98% (GC)

Catalog Numbers:

40781-0000, 40781-0010, 40781-0030

Synonyms:

Company Identification: Fisher Scientific UK

Bishop Meadow Road, Loughborough

Leics. LE11 5RG

For information in Europe, call:(01509) 231166

Emergency Number, Europe:01509 231166

Section 2 - Composition, Information on Ingredients

CAS#: 25321-09-9

Chemical Name: Diisopropylbenzene

%: 98

EINECS#: 246-835-6

Hazard Symbols:

None listed

Risk Phrases:

None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Not available

Potential Health Effects

Eye:

Causes eye irritation.

Skin:

Causes skin irritation.

Ingestion:

May cause irritation of the digestive tract.

Inhalation:

May cause respiratory tract irritation.

Chronic:

Section 4 - First Aid Measures

For Eyes:

Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

For Skin:

Get medical aid. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

For Ingestion:

If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

For Inhalation:

Remove from exposure and move to fresh air immediately. If not

breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information:

As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use agent most appropriate to extinguish fire.

Section 6 - Accidental Release Measures

General Information:

Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks:

Sweep up or absorb material, then place into a suitable clean, dry, closed container for disposal.

Section 7 - Handling and Storage

Handling:

Wash thoroughly after handling. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Avoid ingestion and inhalation.

Storage:

Keep container closed when not in use. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls:

Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

CAS# 25321-09-9:

Personal Protective Equipment

Eyes:

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

skin:

Wear appropriate protective gloves to prevent skin exposure.

clothing:

Wear appropriate protective clothing to prevent skin exposure.

Respirators:

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:

Clear liquid

Color:

Not available

Not available

pH: Not available
 Vapor Pressure: 0.25 mm Hg @25C
 Viscosity: Not available
 Boiling Point: 77.0 - 82.0 deg C @ 10.00mm H
 Freezing/Melting Point: Not available
 Autoignition Temperature: Not available
 Flash Point: 71 deg C (159.80 deg F)
 Explosion Limits: Lower:Not available
 Explosion Limits: Upper:Not available
 Decomposition Temperature: Not available
 Solubility in water: Not available
 Specific Gravity/Density: .8570g/cm3
 Molecular Formula: C12H18
 Molecular Weight: 162.27

Section 10 - Stability and Reactivity

Chemical Stability:
 Stable under normal temperatures and pressures.
 Conditions to Avoid:
 Incompatible materials.
 Incompatibilities with Other Materials
 Strong oxidizing agents.
 Hazardous Decomposition Products
 Irritating and toxic fumes and gases.
 Hazardous Polymerization
 Has not been reported.

Section 11 - Toxicological Information

RTECS#:
 CAS# 25321-09-9: CZ6330000
 LD50/LC50:
 RTECS: CAS# 25321-09-9: Draize test, rabbit, eye: 500
 mg/24H Mild; Draize test, rabbit, skin: 100 mg/24H Moderate;
 Oral, rat: LD50 = 6500 uL/kg; Skin, rabbit: LD50 = 16
 L/kg;.
 Carcinogenicity:
 Diisopropylbenzene -
 Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
 Refer:
 See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Refer:

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

A

Shipping Name: Not regulated as a hazardous material
 Hazard Class:
 UN Number:
 Packing Group:

Shipping Name: Not regulated as a hazardous material
 Hazard Class:
 UN Number:

Packing Group:

RID/ADR

Shipping Name: Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 25321-09-9: 1

Canada

CAS# 25321-09-9 is listed on Canada's DSL List

US Federal

TSCA

CAS# 25321-09-9 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date:

3/24/1998

Revision #4 Date

3/16/2007

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300
National Response in Canada
CANUTEC: 613-998-6666
Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

DIETHYLENETRIAMINE

1. Product Identification

Synonyms: DETA; bis (2-aminoethyl) amine, 2,2'-Diaminodiethylamine; Aminoethylethandiamine
CAS No.: 111-40-0
Molecular Weight: 103.17
Chemical Formula: $\text{NH}_2\text{C}_2\text{H}_4\text{NHC}_2\text{H}_4\text{NH}_2$
Product Codes: H768

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Diethylene Triamine	111-40-0	100%	Yes

3. Hazards Identification

Emergency Overview

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Life)

DIETHYLENETRIAMINE

Flammability Rating: 1 - Slight

Reactivity Rating: 2 - Moderate

Contact Rating: 4 - Extreme (Corrosive)

Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES

Storage Color Code: White Stripe (Store Separately)

Potential Health Effects

Inhalation:

Inhalation can cause severe irritation of mucous membranes and upper respiratory tract. Symptoms may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. High concentrations may cause lung damage. May cause allergic reaction in sensitive individuals.

Ingestion:

Corrosive. Swallowing can cause severe burns of the mouth, throat, and stomach. Can cause sore throat, vomiting, diarrhea.

Skin Contact:

Corrosive. Symptoms of redness, pain, and severe burn can occur. May be absorbed through the skin with possible systemic effects. May cause allergic reaction in sensitive individuals.

Eye Contact:

Corrosive! Vapors are irritating and may cause damage to the eyes. Contact may cause severe burns and permanent eye damage.

Chronic Exposure:

Individuals chronically exposed may become sensitized, with allergic reactions to exposure.

Aggravation of Pre-existing Conditions:

Some individuals may become sensitized. Once acquired, sensitivity may be retained for many years, with possible cross-sensitization to other amines. Persons with pre-existing skin disorders or impaired respiratory function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

CALL A PHYSICIAN IMMEDIATELY.

Ingestion:

DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Call a physician immediately.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Call a physician, immediately. Wash clothing before reuse.

Eye Contact:

Immediately flush eyes with gentle but large stream of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Call a physician immediately.

5. Fire Fighting Measures

Fire:

Flash point: 102C (216F) CC

Autoignition temperature: 395C (743F)

Flammable limits in air % by volume:

lcl: 1.9; ucl: 11.6

DIETHYLENETRIAMINE

Low fire hazard when exposed to heat or flames.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide. Direct stream of water can scatter and spread flames. Water spray may be used to keep fire exposed containers cool.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Protect against physical damage. Outside or detached storage is preferred. Inside storage should be in a standard flammable liquids storage room or cabinet. Separate from oxidizing materials. Storage and use areas should be No Smoking areas. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

-ACGIH Threshold Limit Value (TLV): 1 ppm (TWA) (skin)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134).

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Yellow liquid.

Odor:

Slight ammonia odor.

Solubility:

Completely soluble in water.

Specific Gravity:

0.96 @ 20C/20C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

No information found.

Boiling Point:

207C (405F)

Melting Point:

-39C (-38F)

Vapor Density (Air=1):

3.56

Vapor Pressure (mm Hg):

0.37 @ 20C (68F)

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage. Hygroscopic.

Hazardous Decomposition Products:

May form carbon oxides, nitrogen oxides, hydrocarbons and amine vapors when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

This material is a strong alkaline. It reacts with carbon dioxide from the air; reacts violently with strong oxidants, acids, halogens, and reactive organic compounds; is corrosive toward aluminum, zinc, copper and its alloys; and causes spontaneous ignition with cellulose nitrate.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 1080 mg/kg; skin rabbit LD50: 1090 mg/kg.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Diethylene Triamine (111-40-0)	No	No	None

12. Ecological Information

Environmental Fate:

When released into the soil, this material may evaporate to a moderate extent. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is not expected to biodegrade. When released into water, this material is not expected to evaporate significantly. This material has a log octanol-water partition coefficient of less than 3.0. This material is not expected to significantly bioaccumulate. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into the air, this material is expected to have a half-life of less than 1 day.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8

UN/NA: UN2079

Packing Group: II

Information reported for product/size: 500ML

International (Water, I.M.O.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8

UN/NA: UN2079

Packing Group: II

Information reported for product/size: 500ML

International (Air, I.C.A.O.)

Proper Shipping Name: DIETHYLENETRIAMINE

Hazard Class: 8

UN/NA: UN2079

Packing Group: II

Information reported for product/size: 500ML

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----
 Ingredient TSCA EC Japan Australia

 Diethylene Triamine (111-40-0) Yes Yes Yes Yes

-----\Chemical Inventory Status - Part 2\-----
 Ingredient Korea DSL NDSL Phil.

 Diethylene Triamine (111-40-0) Yes Yes No Yes

-----\Federal, State & International Regulations - Part 1\-----
 Ingredient -SARA 302- -SARA 313-
 RQ TPQ List Chemical Catg.

 Diethylene Triamine (111-40-0) No No No No

-----\Federal, State & International Regulations - Part 2\-----
 Ingredient CERCLA -RCRA- -TSCA-
 261.33 8(d)

 Diethylene Triamine (111-40-0) No No No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: Yes
 SARA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
 Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2X

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 3 Flammability: 1 Reactivity: 0

Label Hazard Warning:

DANGER! CORROSIVE. CAUSES BURNS TO ANY AREA OF CONTACT. HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. MAY CAUSE ALLERGIC SKIN OR RESPIRATORY REACTION.

Label Precautions:

Do not breathe vapor.

Do not get in eyes, on skin, or on clothing.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing

DIETHYLENETRIAMINE

contaminated clothing and shoes. Wash clothing before reuse. If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician immediately.

Product Use:

Laboratory Reagent.

Revision Information:

No Changes.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety

Phone Number: (314) 654-1600 (U.S.A.)

MSDS Number: **08764** * * * * * Effective Date: **05/25/06** * * * * * Supersedes: **01/28/05****MSDS****Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



Mallinckrodt
CHEMICALS



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-696-6666

Outside U.S. and Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-552-2537) for assistance.

DIETHYLENE GLYCOL

1. Product Identification

Synonyms: 2,2'-Oxydiethanol; 2,2'-Oxybisethanol; 2,2' Dihydroxydiethyl ether; CELLOSOLVE®; glycol ether; Glycolethyl ether

CAS No.: 111-46-6

Molecular Weight: 106.14

Chemical Formula: C₄H₁₀O₃

Product Codes:

J.T. Baker: S856

Mallinckrodt: 11413, 4911

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Diethylene Glycol	111-46-6	99 - 100%	Yes

3. Hazards Identification

Emergency Overview

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.

SAF-T-DATA^(tm) Ratings (Provided here for your convenience)

DIETHYLENE GLYCOL

Health Rating: 2 - Moderate (Life)

Flammability Rating: 1 - Slight

Reactivity Rating: 1 - Slight

Contact Rating: 1 - Slight

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES

Storage Color Code: Green (General Storage)

Potential Health Effects

Inhalation:

Low inhalation hazard unless heated because of low vapor pressure.

Ingestion:

Low acute toxicity. Probable lethal dose to humans is 0.5-5 g/kg. Causes nerve depression, liver and kidney lesions and anuria (urination retardation). Causes irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea.

Skin Contact:

May be an irritant to skin on prolonged exposure.

Eye Contact:

May be an irritant to eyes and surrounding tissue.

Chronic Exposure:

Liver and kidney lesions and damage.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

4. First Aid Measures

Inhalation:

Remove to fresh air. Not expected to require first aid measures.

Ingestion:

Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician.

Skin Contact:

Remove any contaminated clothing. Wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

Eye Contact:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Call a physician if irritation persists.

5. Fire Fighting Measures

Fire:

Flash point: 124C (255F) CC

Autoignition temperature: 229C (444F)

Flammable limits in air % by volume:

lcl: 1.6; ucl: 10.8

Fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:

Above flash point, vapor-air mixtures are explosive within flammable limits noted above.

Fire Extinguishing Media:

Powder, alcohol foam, water spray or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

7. Handling and Storage

Keep in a tightly closed container. Protect from physical damage. Store in a cool, dry, ventilated area away from sources of heat, moisture and incompatibilities. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

AIHA Workplace Environmental Exposure Level (WEEL): Vapor and Aerosol = 50ppm; Aerosol, only = 10mg/m³.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

If the exposure limit is exceeded, a half-face respirator with an organic vapor cartridge and particulate filter (NIOSH type P95 or R95 filter) may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece respirator with an organic vapor cartridge and particulate filter (NIOSH P100 or R100 filter) may be worn up to 50 times the exposure limit, or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. Please note that N series filters are not recommended for this material. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator. **WARNING:** Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

Clear, colorless liquid.

Odor:

Odorless.

Solubility:

Infinitely soluble.

Specific Gravity:

1.118 @ 20C/20C

pH:

No information found.

% Volatiles by volume @ 21C (70F):

100

Boiling Point:

244 - 245C (471 - 473F)

Melting Point:

-6.5C (21F)

Vapor Density (Air=1):

3.66

Vapor Pressure (mm Hg):

1 @ 91.8C (198F)

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

Toxic gases and vapors may be released if involved in a fire. Carbon dioxide and carbon monoxide may form when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers, strong acids and strong bases.

Conditions to Avoid:

Incompatibles.

11. Toxicological Information

Oral rat LD50: 12565 mg/kg. Skin rabbit LD50: 11.89 g/kg Irritation: eye rabbit, standard Draize: 50 mg mild. Investigated as a tumorigen and reproductive effector.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
Diethylene Glycol (111-46-6)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
Diethylene Glycol (111-46-6)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----				
Ingredient	Korea	DSL	NDL	Phil.
Diethylene Glycol (111-46-6)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302- RQ	TPQ	-SARA 313- List	Chemical Catg.
Diethylene Glycol (111-46-6)	No	No	No	Glycol ether

-----\Federal, State & International Regulations - Part 2\-----			
Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8 (d)
Diethylene Glycol (111-46-6)	No	No	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 RA 311/312: Acute: Yes Chronic: Yes Fire: No Pressure: No
 Reactivity: No (Pure / Liquid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 0

Label Hazard Warning:

WARNING! HARMFUL IF SWALLOWED. MAY CAUSE IRRITATION TO SKIN AND EYES.

Label Precautions:

Wash thoroughly after handling.

Avoid contact with eyes, skin and clothing.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Call a physician. In case of contact, immediately flush skin or eyes with plenty of water for at least 15 minutes. Call a physician if irritation develops or persists.

Product Use:

Laboratory Reagent.

Revision Information:

MSDS Section(s) changed since last revision of document include: 9.

Disclaimer:

Mallinckrodt Baker, Inc. provides the information contained herein in good faith but makes no representation as to its comprehensiveness or accuracy. This document is intended only as a guide to the appropriate precautionary handling of the material by a properly trained person using this product. Individuals receiving the information must exercise their independent judgment in determining its appropriateness for a particular purpose. MALLINCKRODT BAKER, INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE WITH RESPECT TO THE INFORMATION SET FORTH HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS. ACCORDINGLY, MALLINCKRODT BAKER, INC. WILL NOT BE RESPONSIBLE FOR DAMAGES RESULTING FROM USE OF OR RELIANCE UPON THIS INFORMATION.

Prepared by: Environmental Health & Safety

Phone Number: (314) 654-1600 (U.S.A.)



The Chemical Company

Safety data sheet

Diethyl ketone

Revision date : 2006/04/10

Version: 1.0

Page: 1/7

(30036696/MDS_GEN_US/EN)

1. Substance/preparation and company identification

Company

BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932

24 Hour Emergency Response Information

CHEMTREC: (800) 424-9300
BASF HOTLINE: (800) 832-HELP

Molecular formula:

C(5)H(10)O

Chemical family:

ketones

Synonyms:

Diethylketone

2. Composition/information on ingredients

CAS Number

96-22-0

Content (W/W)

Chemical name

pentan-3-one

3. Hazard identification

Emergency overview

DANGER: FLAMMABLE LIQUID. MAY BE HARMFUL IF SWALLOWED.

MAY BE HARMFUL IF INHALED.

MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION.

INGESTION MAY CAUSE GASTRIC DISTURBANCES.

Avoid contact with the skin, eyes and clothing.

Avoid inhalation of mists/vapours.

Use with local exhaust ventilation.

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator.

Wear NIOSH-certified chemical goggles.

Wear chemical resistant protective gloves.

Wear protective clothing.

Eye wash fountains and safety showers must be easily accessible.

Potential health effects

Primary routes of exposure

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

Irritation:

Irritating to respiratory system. Repeated exposure may cause skin dryness or cracking.

Sensitization:

The substance did not cause skin sensitization in humans.

Medical conditions aggravated by overexposure:

Data available do not indicate that there are medical conditions that are generally recognized as being aggravated by exposure to this substance/product.

See MSDS section 11 - Toxicological information.



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Diethyl ketone

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Potential environmental effects

Aquatic toxicity:

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

4. First-aid measures

General advice:

Remove contaminated clothing.

If inhaled:

Remove the affected individual into fresh air and keep the person calm. Assist in breathing if necessary. Immediate medical attention required.

If on skin:

Wash affected areas thoroughly with soap and water. Remove contaminated clothing. Wash soiled clothing immediately. If irritation develops, seek medical attention.

If in eyes:

In case of contact with the eyes, rinse immediately for at least 15 minutes with plenty of water. If irritation develops, seek medical attention.

If swallowed:

Rinse mouth and then drink plenty of water. Induce vomiting. Never induce vomiting or give anything by mouth if the victim is unconscious or having convulsions. Immediate medical attention required.

5. Fire-fighting measures

Flash point: 7 °C (DIN 51755)

Autoignition: 425 °C (DIN 51794)

Lower explosion limit: 1.6 %(V)

Upper explosion limit: 7.7 %(V)

Suitable extinguishing media:

water fog, foam, dry extinguishing media

Unsuitable extinguishing media for safety reasons:

water

Hazards during fire-fighting:

No particular hazards known.

Protective equipment for fire-fighting:

Firefighters should be equipped with self-contained breathing apparatus and turn-out gear.

Further information:

If exposed to fire, keep containers cool by spraying with water.

NFPA Hazard codes:

Health : 1 Fire: 3 Reactivity: 0 Special:



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6. Accidental release measures

Personal precautions:

Breathing protection required.

Environmental precautions:

Substance/product is RCRA hazardous due to its properties.

Cleanup:

Spills should be contained, solidified, and placed in suitable containers for disposal.

7. Handling and storage

Handling

General advice:

See MSDS section 10 - Stability and reactivity. See MSDS section 5 - Fire fighting measures.

Protection against fire and explosion:

See MSDS section 5 - Fire fighting measures.

Storage

General advice:

Keep container tightly closed in a cool, well-ventilated place.
Avoid extreme heat. Keep away from sources of ignition - No smoking.

Storage stability:

Storage temperature: 20 °C
Storage duration: 24 Months

8. Exposure controls and personal protection

Components with workplace control parameters

pentan-3-one

ACGIH

TWA value 200 ppm ; STEL value 300 ppm ;

Advice on system design:

Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:

Wear a NIOSH-certified (or equivalent) organic vapour/particulate respirator. Do not exceed the maximum use concentration for the respirator facepiece/cartridge combination. For emergency or non-routine, high exposure situations, use a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied-air respirator (SAR) with escape provisions. Observe OSHA regulations for respirator use (29 CFR 1910.134).



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Hand protection:

Chemical resistant protective gloves, Consult with glove manufacturer for testing data.

Eye protection:

Tightly fitting safety goggles (chemical goggles).

General safety and hygiene measures:

Eye wash fountains and safety showers must be easily accessible. Wear protective clothing as necessary to prevent contact.

9. Physical and chemical properties

Form:	liquid	
Odour:	ketone-like	
Colour:	colourless to yellow	
pH value:	approx. 6	(50 g/ml)
Melting point:	-39 °C	
Boiling point:	101 - 102 °C	
Vapour pressure:	37.6 mbar	(20 °C)
Density:	0.815 g/cm ³	(20 °C)
Partitioning coefficient n-octanol/water (log Pow):	0.85	
Solubility in water:		(20 °C) slightly soluble
Solubility (qualitative):	miscible	
	solvent(s): organic solvents,	

10. Stability and reactivity

Substances to avoid:

No data available.

Hazardous reactions:

The product is chemically stable.

Corrosion to metals:

No corrosive effect on metal.

11. Toxicological information

Acute toxicity

Oral:

LD50/rat: approx. 2,900 mg/kg

Moderately toxic.

Inhalation:

Inhalation-risk test (IRT): No mortality within 10 minutes as shown in animal studies. Deaths possible with prolonged exposure.

Dermal:

LD50/rabbit: 16,200 mg/kg



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Skin irritation:
rabbit: non-irritant (BASF-Test)

Eye irritation :
rabbit: Nonirritating.

Sensitization:
No sensitizing effect.

12. Ecological information

Environmental fate and transport

Biodegradation:
Test method: APHA 'Standard Methods', No. 219, 1971, municipal sewage treatment plant effl.
Method of analysis: BOD of the ThOD
Degree of elimination: 75 % (5 d)
Evaluation: Readily biodegradable (according to OECD criteria).
Literature data.

Bioaccumulation:

Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Chemical oxygen demand (COD):
2,246 mg/g

Biochemical oxygen demand (BOD):
Incubation period 5 d: 1,310 mg/g

Environmental toxicity

Acute and prolonged toxicity to fish:
Fathead minnow/LC50 (96 h): 1,540 mg/l
The statement of the toxic effect relates to the analytically determined concentration. Literature data.

Acute toxicity to aquatic invertebrates:
Directive 79/831/EEC Daphnia magna/EC50 (48 h): > 500 mg/l
Nominal concentration.

Toxicity to aquatic plants:
DIN 38412 Part 9 green algae/EC50 (72 h): > 500 mg/l
Nominal concentration.

Toxicity to microorganisms:
DIN 38412 Part 8 bacterium/EC50 (17 h): > 10,000 mg/l
Nominal concentration.



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13. Disposal considerations

Waste disposal of substance:

Dispose of in a RCRA-licensed facility.

Do not discharge into waterways or sewer systems without proper authorization.

Dispose of in accordance with national, state and local regulations.

Container disposal:

Empty containers with less than 1 inch of residue may be landfilled at a licensed facility. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers. If containers are not empty, they must be disposed of in a RCRA-licensed facility.

RCRA: D001

14. Transport information

Land transport

USDOT

Proper shipping name: DIETHYL KETONE

Hazard class: 3

ID-number: UN 1156

Packing group: II

Sea transport

IMDG

Proper shipping name: DIETHYL KETONE

Hazard class: 3

ID-number: UN 1156

Packing group: II

Marine pollutant: NO

Air transport

IATA/CAO

Proper shipping name: DIETHYL KETONE

Hazard class: 3

ID-number: UN 1156

Packing group: II

15. Regulatory information

Federal Regulations



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Registration status:

TSCA, US

released / listed

OSHA hazard category:

Flammable Liquid

ACGIH TLV established, Skin and/or eye irritant, OSHA PEL established,

SARA hazard categories (EPCRA 311/312): Fire, Acute

State regulations

State RTK

CAS Number

96-22-0

Chemical name

pentan-3-one

State RTK

MA, NJ, PA

16. Other information

HMIS III rating

Health: 1

Flammability: 3

Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information

prod_reg@basf.com

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET



Material Safety Data Sheet

The Dow Chemical Company

Product Name: Diethanolamine

Issue Date: 09/15/2006

Print Date: 31 Jul 2007

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
Diethanolamine

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview

Color: Colorless above freezing point

Physical State: Liquid above freezing point

Odor: Ammoniacal

Hazards of product:

WARNING! Causes eye irritation. May cause skin irritation. May be harmful if swallowed.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause severe corneal injury.

Skin Contact: Prolonged contact may cause skin irritation with local redness. Repeated contact may cause skin burns. Symptoms may include pain, severe local redness, swelling, and tissue damage. May cause more severe response if skin is abraded (scratched or cut). Not classified as corrosive to the skin according to DOT guidelines.

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

* Indicates a Trademark

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility. Vapor from heated material may cause respiratory irritation and other effects.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury. Swallowing may result in gastrointestinal irritation or ulceration.

Effects of Repeated Exposure: Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.

Cancer Information: Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans.

Birth Defects/Developmental Effects: Has been toxic to the fetus in lab animals at doses toxic to the mother.

3. Composition Information

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	> 99.2 %

4. First-aid measures

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin Contact: Wash skin with plenty of water.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

Notes to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers,

boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Non-combustible material. Sand. Clay. Vermiculite. Zorb-all®. Collect in suitable and properly labeled containers. Do NOT use absorbent materials such as: Cellulose. Sawdust. Large spills: Contain spilled material if possible. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Refer to Section 7, Handling, for additional precautionary measures. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Avoid contact with eyes. Avoid contact with skin and clothing. Do not swallow. Wash thoroughly after handling. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store in a dry place. Avoid moisture. Do not store in: Aluminum. Copper. Copper alloys. Avoid freezing.

Storage Period: **Storage temperature:**
34 - 49 °C

Bulk

6 Months

Metal drums.

24 Months

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
N,N-Diethanolamine	ACGIH	TWA	2 mg/m3 SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin Protection: When prolonged or frequently repeated contact could occur, use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, boots, apron, or full-body suit will depend on the task. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Chlorinated polyethylene. Polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl alcohol ("PVA"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Liquid above freezing point
Color	Colorless above freezing point
Odor	Ammoniacal
Flash Point - Closed Cup	191 °C (376 °F) <i>Pensky-Martens Closed Cup ASTM D 93</i>
Flammable Limits In Air	Lower: 1.5 %(V) <i>Literature</i> Upper: No test data available
Autoignition Temperature	395 °C (743 °F) <i>Literature</i>
Vapor Pressure	< 0.01 mmHg @ 20 °C <i>Literature</i>
Boiling Point (760 mmHg)	268 °C (514 °F) <i>Estimated Decomposes.</i>
Vapor Density (air = 1)	3.6 <i>Literature</i>
Specific Gravity (H2O = 1)	1.092 30 °C/20 °C <i>Literature</i>
Freezing Point	28.0 °C (82.4 °F) <i>Literature</i>
Melting Point	Not applicable to liquids
Solubility in Water (by weight)	100 % @ 20 °C <i>Literature</i>
pH	11.5 (10% aqueous solution)
Octanol/Water Partition Coefficient	-2.18 <i>Shake flask (OECD 107 Test)</i>
Dynamic Viscosity	380 cps @ 30 °C <i>Literature</i>
Kinematic Viscosity	No test data available

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose.

Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture.

Incompatible Materials: Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Corrosive when wet. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials.

11. Toxicological Information**Acute Toxicity****Ingestion**

LD50, Rat, female 680 - 1,100 mg/kg

Skin Absorption

LD50, Rabbit > 8,200 mg/kg

Repeated Dose Toxicity

Results from repeated exposure tests on diethanolamine in laboratory animals include anemia (rats) and effects on kidney (rats and mice) and liver (mice). Heart and nervous system effects were also observed in animals given exaggerated doses of diethanolamine. Changes in other organs, causes of which are nonspecific, were judged secondary to the poor health of the animals due to the extremely high doses of diethanolamine given.

Chronic Toxicity and Carcinogenicity

Findings from a chronic diethanolamine skin painting study by NTP include liver and kidney tumors in mice; no tumors were observed in rats. Mechanistic studies indicate that tumor formation is of questionable relevance to humans. A number of factors may have influenced the results and are being considered in their interpretation.

Developmental Toxicity

Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information**CHEMICAL FATE****Movement & Partitioning**

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 5.35E-14 atm*m3/mole; 25 °C Measured

Partition coefficient, n-octanol/water (log Pow): -2.18 Shake flask (OECD 107 Test)

Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is ultimately biodegradable (reaches > 70% mineralization in OECD test(s) for inherent biodegradability).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
8.90E-11 cm3/s	0.167 d	Estimated

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
100 %	19 d	OECD 301E Test
94 %	14 d	OECD 302B Test

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
10.3 %	34.7 %	56.3 %	

Chemical Oxygen Demand: 1.33 mg/mg**Theoretical Oxygen Demand:** 2.13 mg/mg**ECOTOXICITY**

Material is moderately toxic to aquatic organisms on an acute basis (LC50/EC50 between 1 and 10 mg/L in most sensitive species tested). May increase pH of aquatic systems to > pH 10 which may be toxic to aquatic organisms.

Fish Acute & Prolonged Toxicity

LC50, bluegill (*Lepomis macrochirus*), static: 1,850 - 2,100 mg/l

Aquatic Invertebrate Acute Toxicity

LC50, water flea *Daphnia magna*, 48 h: 122 mg/l

Aquatic Plant Toxicity

EC50, green alga *Selenastrum capricornutum*, biomass growth inhibition, 96 h: 3.3 - 3.6 mg/l

Toxicity to Micro-organisms

EC50, OECD 209 Test; activated sludge, respiration inhibition, 3 h: > 1,000 mg/l

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information**DOT Non-Bulk**

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III

DOT Bulk

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III

IMDG

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, NOS

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 **ID Number:** UN3082 **Packing Group:** PG III

EMS Number: F-A,S-F

Marine pollutant.: No

ICAO/IATA

Proper Shipping Name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.

Technical Name: CONTAINS DIETHANOLAMINE

Hazard Class: 9 ID Number: UN3082 Packing Group: PG III

Additional Information

Reportable quantity: 101 lb - DIETHANOLAMINE

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information**OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	No
Fire Hazard	No
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	> 99.2 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
N,N-Diethanolamine	111-42-2	> 99.2 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information

Product Literature

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure. Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	1	0

Recommended Uses and Restrictions

Chemical intermediate.

Revision

Identification Number: 78279 / 1001 / Issue Date 09/15/2006 / Version: 3.0

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ_DES	Hazard Designation
Action Level	A value set by OSHA that is lower than the PEL which will trigger the need for activities such as exposure monitoring and medical surveillance if exceeded.

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: DIESEL FUEL

Revision Date: 02-Jan-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: DIESEL FUEL
Synonyms: None
Chemical Family: Organic hydrocarbon
Application: Fuel
Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000
Prepared By: Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Diesel	68476-34-6	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview May cause eye, skin, and respiratory irritation. May cause headache, dizziness, and other central nervous system effects. May be harmful if swallowed. Potential carcinogen. Combustible.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin In case of contact, immediately flush skin with plenty of soap and water for at least 15 minutes. Get medical attention. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Min: > 150
Flash Point Method:	Not Determined
Autoignition Temperature (F):	495
Autoignition Temperature (C):	257
Flammability Limits in Air - Lower (%):	0.7
Flammability Limits in Air - Upper (%):	6

Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.
Special Exposure Hazards	Use water spray to cool fire exposed surfaces. Closed containers may explode in fire. Decomposition in fire may produce toxic gases.
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.
NFPA Ratings:	Health 1, Flammability 2, Reactivity 0
HMIS Ratings:	Flammability 2, Reactivity 0, Health 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures	Use appropriate protective equipment. Wear self-contained breathing apparatus in enclosed areas.
Environmental Precautionary Measures	Prevent from entering sewers, waterways, or low areas.
Procedure for Cleaning / Absorption	Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions	Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.
Storage Information	Store away from oxidizers. Keep from heat, sparks, and open flames. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls	Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.
Respiratory Protection	Organic vapor respirator.
Hand Protection	Impervious rubber gloves.
Skin Protection	Rubber apron.
Eye Protection	Chemical goggles; also wear a face shield if splashing hazard exists.
Other Precautions	Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Clear colorless

DIESEL FUEL
Page 2 of 6

9. PHYSICAL AND CHEMICAL PROPERTIES

Odor:	Diesel
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	0.84
Density @ 20 C (lbs./gallon):	7.0
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	300
Boiling Point/Range (C):	148
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	1
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	100
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistrokes):	2.0-5.8
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	Keep away from heat, sparks and flame.
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	May cause skin defatting with prolonged exposure. May cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aggravated Medical Conditions	Skin disorders.
Chronic Effects/Carcinogenicity	Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.
Other Information	None known.

Toxicity Tests

Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Slowly biodegradable
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined
Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Not restricted except for ADR

DOT (Bulk)

Diesel Fuel, Combustible Liquid, NA1993, III

Canadian TDG

Not restricted except for ADR

ADR

UN1202, Diesel, 3, III

Not restricted except for ADR

DIESEL FUEL
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Air Transportation

ICAO/IATA

UN1202, Diesel, 3, III

Not restricted except for ADR

Sea Transportation

IMDG

UN1202, Diesel, 3, III

Not restricted except for ADR

Other Shipping Information

Labels: Combustible

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard
Chronic Health Hazard
Fire Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity For This Product Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.

California Proposition 65 All components listed do not apply to the California Proposition 65 Regulation.

MA Right-to-Know Law Does not apply.

NJ Right-to-Know Law Does not apply.

PA Right-to-Know Law Does not apply.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class B3 Combustible Liquids

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **DETERGENT**

Revision Date: 06-Jan-2005

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: DETERGENT
Synonyms: None
Chemical Family: Anionic and Nonionic Surfactant
Application: Anionic Surfactant
Manufacturer/Supplier: Baroid Drilling Fluids
a Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000
Prepared By: Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Contains no hazardous substances	Mixture	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye and skin irritation.

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin Wash with soap and water.

Eyes In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	> 210
Flash Point/Range (C):	> 99
Flash Point Method:	PMCC
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media Water fog, carbon dioxide, foam, dry chemical.

Special Exposure Hazards Decomposition in fire may produce toxic gases.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 0, Reactivity 0
HMIS Ratings: Flammability 0, Reactivity 0, Health 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors.

Storage Information Keep container closed when not in use. Product has a shelf life of 36 months.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.

Hand Protection Impervious rubber gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Red
Odor:	Pleasant
pH:	9
Specific Gravity @ 20 C (Water=1):	1.01

DETERGENT
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Density @ 20 C (lbs./gallon):	8.4
Bulk Density @ 20 C (lbs/ft3):	62.8
Boiling Point/Range (F):	215
Boiling Point/Range (C):	102
Freezing Point/Range (F):	30
Freezing Point/Range (C):	-1.11
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	2.0
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Miscible
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause central nervous system depression including headache, dizziness, drowsiness, incoordination, slowed reaction time, slurred speech, giddiness and unconsciousness.
Skin Contact	Causes drying of the skin. May cause mild skin irritation.
Eye Contact	May cause mild eye irritation.
Ingestion	May cause abdominal pain, vomiting, nausea, and diarrhea.
Aggravated Medical Conditions	None known.
Chronic Effects/Carcinogenicity	No data available to indicate product or components present at greater than 1% are chronic health hazards.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	Not determined
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined

Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or disposal according to national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG
Not restricted

Other Shipping Information

DETERGENT
Page 4 of 5

Labels: None

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	One or more components listed.
NJ Right-to-Know Law	One or more components listed.
PA Right-to-Know Law	One or more components listed.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

END OF MSDS

DETERGENT
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(MSDS #830555 - RTF Format)

MATERIAL SAFETY DATA SHEET

SHELL MSDS: 830555-1 10/06/00

DEMINERALIZED WATER

TELEPHONE NUMBER:

24 HOUR EMERGENCY ASSISTANCE

CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE

SHELL: 713-241-4819

COMPANY NAME AND ADDRESS

SHELL CHEMICAL COMPANY

P.O. BOX 4320

HOUSTON, TX 77210-4320 USA

SECTION I NAME

PRODUCT: DEMINERALIZED WATER

CHEM NAME: --

CHEM FAMILY: NONE

SHELL CODE: SSSSS

HEALTH HAZARD: 3

FIRE HAZARD: 0

REACTIVITY: 0

SECTION II-A INGREDIENTS

NO.	COMPOSITION	CAS NO.	PERCENT
P	DEMINERALIZED WATER	7732-18-5	100
1	WATER	7732-18-5	100

SECTION II-B ACUTE TOXICITY DATA

NO. ACUTE ORAL LD50 ACUTE DERMAL LD50 ACUTE INHALATION LD50

P NO DATA AVAILABLE

SECTION III HEALTH INFORMATION

THE HEALTH EFFECTS NOTED BELOW ARE CONSISTENT WITH REQUIREMENTS UNDER THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200).

EYE CONTACT:

MATERIAL IS PRESUMED TO BE NONIRRITATING TO MINIMALLY IRRITATING TO THE EYES. HOT MATERIAL MAY CAUSE THERMAL EYE BURNS.

SKIN CONTACT:

MATERIAL IS PRESUMED TO BE NONIRRITATING TO SLIGHTLY IRRITATING TO THE SKIN. HOT MATERIAL MAY CAUSE THERMAL BURNS.

INHALATION:

http://sww-uschemicalonline.shell.com/USChemicalOnline/doc_view.asp?ViewType=&Vi... 6/19/2007

MATERIAL IS PRESUMED TO HAVE A LOW ORDER OF ACUTE TOXICITY UPON INHALATION OF MIST OR VAPORS. HOT MATERIAL MAY CAUSE THERMAL BURNS.

INGESTION:

MATERIAL IS PRESUMED TO HAVE A LOW ORDER OF ACUTE ORAL TOXICITY. HOT MATERIAL MAY CAUSE THERMAL BURNS.

SIGNS AND SYMPTOMS:

TISSUE DAMAGE AT ALL POINTS OF CONTACT WITH HOT MATERIAL.

AGGRAVATED MEDICAL CONDITIONS:

NONE.

OTHER HEALTH EFFECTS:

SECTION IV OCCUPATIONAL EXPOSURE LIMITS

COMP NO.	OSHA PEL/TWA	PEL/CEILING	ACGIH TLV/TWA	TLV/STEL	OTHER
P	NONE				

SECTION V EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT:

FLUSH EYES WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS OPEN.

SKIN CONTACT:

FLUSH SKIN WITH WATER FOR AT LEAST 15 MINUTES WHILE REMOVING CONTAMINATED CLOTHING AND SHOES. GET MEDICAL ATTENTION. DO NOT REUSE CLOTHING OR SHOES UNTIL CLEANED.

INHALATION:

REMOVE VICTIM TO FRESH AIR AND PROVIDE OXYGEN IF BREATHING IS DIFFICULT. GET MEDICAL ATTENTION.

INGESTION:

DO NOT INDUCE VOMITING. GET MEDICAL ATTENTION.

NOTE TO PHYSICIAN:

SECTION VI SUPPLEMENTAL HEALTH INFORMATION

NONE IDENTIFIED.

SECTION VII PHYSICAL DATA

BOILING POINT (DEG F): SPECIFIC GRAVITY (H2O = 1): VAPOR PRESSURE (MM HG):

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1.0

NOT APPLICABLE

MELTING POINT (DEG F): SOLUBILITY IN WATER: VAPOR DENSITY (AIR = 1):
NOT APPLICABLE NOT APPLICABLE NOT APPLICABLE

PH: 7.0

EVAPORATION RATE (NORMAL BUTYL ACETATE = 1): NOT APPLICABLE

APPEARANCE AND ODOR:
WATER WHITE; ODORLESS.

SECTION VIII FIRE AND EXPLOSION HAZARDS

FLASH POINT AND METHOD: NOT APPLICABLE

FLAMMABLE LIMITS/PERCENT VOLUME IN AIR: LOWER: N/APP UPPER: N/APP

EXTINGUISHING MEDIA:
NOT APPLICABLE.

SPECIAL FIRE FIGHTING PROCEDURES AND PRECAUTIONS:

UNUSUAL FIRE AND EXPLOSION HAZARDS:

SECTION IX REACTIVITY

STABILITY: STABLE

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR

CONDITIONS AND MATERIALS TO AVOID:
AVOID CONTACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION PRODUCTS:

SECTION X EMPLOYEE PROTECTION

RESPIRATORY PROTECTION:
DO NOT BREATHE STEAM OR MIST.

PROTECTIVE CLOTHING
DO NOT GET IN EYES. WEAR CHEMICAL GOGGLES IF THERE IS POTENTIAL CONTACT WITH EYES. DO NOT GET ON SKIN, ON CLOTHING. WEAR PROTECTIVE CLOTHING SUCH AS GLOVES, OUTER CLOTHING OR APRON, OVERSHOES AND A FACE-SHIELD SUITABLE TO POTENTIAL EXPOSURE.

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EPAHO011000286

ADDITIONAL PROTECTIVE MEASURES:

SECTION XI ENVIRONMENTAL PROTECTION

SPILL OR LEAK PROCEDURES:

*** LARGE SPILLS *** WEAR PROTECTIVE CLOTHING AS APPROPRIATE. SHUT OFF SOURCE OF LEAK IF SAFE TO DO SO. DIKE AND CONTAIN. REMOVE WITH VACUUM TRUCKS OR PUMP TO STORAGE/SALVAGE VESSELS. SOAK UP RESIDUE WITH AN ABSORBENT SUCH AS CLAY, SAND OR OTHER SUITABLE MATERIAL; DISPOSE OF PROPERLY. FLUSH AREA WITH WATER TO REMOVE TRACE RESIDUE. *** SMALL SPILLS *** TAKE UP WITH AN ABSORBENT MATERIAL AND DISPOSE OF PROPERLY.

SECTION XII SPECIAL PRECAUTIONS

THOROUGHLY WASH UP WITH SOAP AND WATER BEFORE EATING, DRINKING, SMOKING OR USING TOILET FACILITIES.

SECTION XIII TRANSPORTATION REQUIREMENTS

DEPARTMENT OF TRANSPORTATION CLASSIFICATION:

TRANSPORTATION REQUIREMENTS DETERMINED ON A CASE BY CASE BASIS BY SHIPPING LOCATION.

DOT PROPER SHIPPING NAME:

OTHER REQUIREMENTS:

BULK, DRUM AND SAMPLE LABELS FOR THIS MATERIAL ARE AVAILABLE FROM THE COMPUTER LABEL SYSTEM (CLS); USE LABEL CODE 830555. THE CLS LABELS DO NOT MEET ANY D.O.T. REQUIREMENTS. THE SHIPPING LOCATION MUST EVALUATE EACH SHIPMENT AND COMPLY WITH D.O.T. MARKING AND LABEL REQUIREMENTS, AS APPROPRIATE.

SECTION XIV OTHER REGULATORY CONTROLS

THIS PRODUCT IS LISTED ON THE EPA/TSCA INVENTORY OF CHEMICAL SUBSTANCES.

IN ACCORDANCE WITH SARA TITLE III, SECTION 313, THE ATTACHED ENVIRONMENTAL DATA SHEET (EDS) SHOULD ALWAYS BE COPIED AND SENT WITH THE MSDS.

SECTION XV STATE REGULATORY INFORMATION

<u>STATE LISTED COMPONENT</u>	<u>CAS NO.</u>	<u>PERCENT</u>	<u>STATE CODE</u>
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BASED ON INFORMATION AVAILABLE TO SHELL, THIS PRODUCT DOES NOT CONTAIN ANY CHEMICAL SUBSTANCE REGULATED BY A SPECIFIC STATE LIST.

SECTION XVI SPECIAL NOTES

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ADDRESS CHANGED.

THE INFORMATION CONTAINED HEREIN IS BASED ON THE DATA AVAILABLE TO US AND IS BELIEVED TO BE CORRECT. HOWEVER, SHELL MAKES NO WARRANTY, EXPRESSED OR IMPLIED REGARDING THE ACCURACY OF THESE DATA OR THE RESULTS TO BE OBTAINED FROM THE USE THEREOF. SHELL ASSUMES NO RESPONSIBILITY FOR INJURY FROM THE USE OF THE PRODUCT DESCRIBED HEREIN.

WE ARE PROVIDING OUR MOST RECENT MATERIAL SAFETY DATA SHEET AND/OR ENVIRONMENTAL DATA SHEET. IF YOU WISH TO RECEIVE UPDATES TO THIS INFORMATION, PLEASE CALL SHELL'S GENERAL MSDS ASSISTANCE LINE (713-241-4819) TO ENSURE THAT YOU ARE ADDED TO SHELL'S REGULAR MSDS DISTRIBUTION SYSTEM.

BE SAFE. READ OUR PRODUCT
SAFETY INFORMATION...AND
PASS IT ON. (PRODUCT
LIABILITY LAW REQUIRES IT)

SHELL CHEMICAL COMPANY
P.O. BOX 4320
HOUSTON, TX 77210-4320 USA

ENVIRONMENTAL DATA SHEET

SHELL EDS: 830555-00 10/06/00

DEMINERALIZED WATER

TELEPHONE NUMBER:

24 HOUR EMERGENCY ASSISTANCE
CHEMTREC: 800-424-9300

GENERAL MSDS ASSISTANCE
SHELL: 713-241-4819

COMPANY NAME AND ADDRESS

SHELL CHEMICAL COMPANY
P.O. BOX 4320
HOUSTON, TX 77210-4320 USA

PRODUCT CODE: SSSSS

SECTION I PRODUCT COMPOSITION

NO.	COMPOSITION	CAS	PERCENT
P	DEMINERALIZED WATER	7732-18-5	100
1	WATER	7732-18-5	100

SECTION II SARA TITLE III INFORMATION

NO.	EHS RQ	EHS TPQ	SEC-313	313 CATEGORY	311/312 CATEGORY
	(*1)	(*2)	(*3)	(*4)	(*5)

P

H-1

http://sww-uschemicalonline.shell.com/USChemicalOnline/doc_view.asp?ViewType=&Vi... 6/19/2007

- *1 = REPORTABLE QUANTITY OF EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
*2 = THRESHOLD PLANNING QUANTITY, EXTREMELY HAZARDOUS SUBSTANCE, SEC 302
*3 = TOXIC CHEMICAL, SEC 313
*4 = CATEGORY AS REQUIRED BY SEC 313 (40 CFR 372.65 C), MUST BE USED ON
TOXIC RELEASE INVENTORY FORM
*5 = CATEGORY (FOR AGGREGATE REPORTING REQUIREMENTS UNDER SARA 311, 312)
HEALTH: H-1 = IMMEDIATE (ACUTE) HEALTH HAZARD
H-2 = DELAYED (CHRONIC) HEALTH HAZARD
PHYSICAL: P-3 = FIRE HAZARD
P-4 = SUDDEN RELEASE OF PRESSURE HAZARD
P-5 = REACTIVE HAZARD

SECTION III ENVIRONMENTAL RELEASE INFORMATION

NOT APPLICABLE

SECTION IV RCRA INFORMATION

PLACE IN AN APPROPRIATE DISPOSAL FACILITY IN COMPLIANCE WITH LOCAL REGULATIONS.









Anachemia

255 Norman.
Lachine (Montreal), Que
H8R 1A3

Material Safety Data Sheet

EMERGENCY NUMBERS:

(USA) CHEMTREC : 1(800) 424-9300 (24hrs)
(CAN) CANUTEC : 1(613) 996-6666 (24hrs)
(USA) Anachemia : 1(518) 297-4444
(CAN) Anachemia : 1(514) 489-5711

WHMIS	Protective Clothing	TDG Road/Rail
WHMIS CLASS: B-3 D-2B		Not controlled under TDG (Canada). PIN: Not applicable. PG: Not applicable.
 	   	

Section I. Product Identification and Uses

Product name	DECYL ALCOHOL	CI#	Not available.
Chemical formula	CH ₃ (CH ₂) ₉ OH	CAS#	112-30-1
Synonyms	Agent 504, Alcohol C-10, Antak, Capric alcohol, Decanol, N-Decanol, 1-Decanol, Decylic alcohol, Dyto S-91, Epal 10, Lorol 22, AC-2825, 30820	Code	AC-2825
Supplier	Anachemia Canada. 255 Norman. Lachine (Montreal), Que H8R 1A3	Formula weight	158.29
		Supersedes	
Material uses	For laboratory use only.		

Section II. Ingredients

Name	CAS #	%	TLV
1) DECYL ALCOHOL	112-30-1	99	Not established by ACGIH

Toxicity values of the hazardous ingredients

DECYL ALCOHOL:
ORAL (LD₅₀): Acute: 4720 mg/kg (Rat). 6500 mg/kg (Mouse).
DERMAL (LD₅₀): Acute: 3560 mg/kg (Rabbit).
VAPOR (LC₅₀): Acute: 4000 mg/m³ (Mouse) (2 hour(s)). 3000 mg/m³ (Mammal).

Physical state and appearance / Odor	Colorless liquid.
pH (1% soln/water)	Not applicable.
Odor threshold	Not available.
Percent volatile	Not available.
Freezing point	7°C
Boiling point	231°C
Specific gravity	0.829 (Water = 1)
Vapor density	5.5 (Air = 1)
Vapor pressure	8.25 mm of Hg (@ 100°C)
Water/oil dist. coeff.	Not available.
Evaporation rate	<0.2 (n-Butyl acetate = 1).
Solubility	Insoluble in cold water.

Section IV. Fire and Explosion Data

Flash point	OPEN CUP: 82°C
Flammable limits	Not available.
Auto-ignition temperature	265°C
Fire degradation products	Oxides of carbon (CO, CO2).
Fire extinguishing procedures	Use DRY chemical, carbon dioxide, foam or water spray. Wear adequate personal protection to prevent contact with material or its combustion products. Self contained breathing apparatus with a full facepiece operated in a pressure demand or other positive pressure mode.
Fire and Explosion Hazards	Combustible liquid. Vapor forms explosive mixture with air. Contact with oxidizers may cause fire and/or explosion. This material may produce a floating fire hazard. Emits toxic fumes under fire conditions.

Section V. Toxicological Properties

Routes of entry	Ingestion and inhalation. Eye contact. Skin contact. Skin absorption.
Effects of Acute Exposure	Harmful by ingestion, inhalation or skin absorption. Severe irritant. Prolonged exposure can cause narcotic effect.
Eye	Causes severe irritation. May cause severe burns and loss of vision. May cause permanent damage. IRRITATION: EYE-RABBIT 83 mg SEVERE.
Skin	Contact with liquid can cause severe irritation or burns. May cause defatting, drying, cracking, redness, itching, and scaling. The amount of tissue damage depends on lenght of contact.
Inhalation	Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract. Inhalation may be fatal as a result of spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, laryngitis, dyspnea, headache, nausea, and vomiting. Prolonged exposure can cause narcotic effect.
Ingestion	If a small amount of the liquid is aspirated into the lungs, very severe lung damage or death could result. May cause diarrhea, dyspnea, and death. See inhalation.

Section V. Toxicological Properties

DECYL ALCOHOL

page 3/4

Effects of Chronic Overexposure See acute effects. Carcinogenic effects: Not available. Mutagenic effects: Not available. Teratogenic effects: Not available. Toxicity of the product to the reproductive system: Not available. To the best of our knowledge, the chemical, physical, and toxicity of this substance has not been fully investigated.

Section VI. First Aid Measures

Eye contact Immediately flush eyes with copious quantities of water for at least 15 minutes holding lids apart to ensure flushing of the entire surface. Seek immediate medical attention.

Skin contact Immediately flush skin with plenty of water and soap for at least 15 minutes while removing contaminated clothing and shoes. Call a physician. Wash contaminated clothing before reusing.

Inhalation Remove patient to fresh air. Administer approved oxygen supply if breathing is difficult. Administer artificial respiration or CPR if breathing has ceased. Call a physician.

Ingestion If conscious, wash out mouth with water. Never give anything by mouth to an unconscious or convulsing person. Seek immediate medical attention. Guard against aspiration into lungs.

Section VII. Reactivity Data

Stability Stable. Conditions to avoid: High temperatures, sparks, open flames and all other sources of ignition, contamination.

Hazardous decomp. products Not available.

Incompatibility Oxidizing agents, acids, acid anhydrides, acid chlorides, halogens, acetaldehyde, ethylene oxide, hexamethylene diisocyanate, hydrogen peroxide, sulfuric acid, hypochlorous acid, diisocyanates, isocyanates, lithium aluminum hydride, nitrogen tetroxide, perchloric acid, barium perchlorate, diethyl aluminum bromide, tri-isobutyl aluminum, aldehydes, monomers, polymerizable esters, alkylene oxides.

Reaction Products Not available. Hazardous polymerization will not occur.

Section VIII. Preventive Measures

DECYL ALCOHOL

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Protective Clothing in case of spill and leak Wear self-contained breathing apparatus, rubber boots and heavy rubber gloves.

Spill and leak Evacuate the area. Eliminate all sources of ignition. Absorb on sand or vermiculite and place in a closed container for disposal. Use non-sparking tools. Ventilate area and wash spill site after material pick up is complete. DO NOT empty into drains. DO NOT touch spilled material.

Waste disposal Burn in a chemical incinerator equipped with an after burner and scrubber. According to all applicable regulations.

Storage and Handling Store in a cool place away from heated areas, sparks, and flame. Store in a well ventilated area. Store away from incompatible materials. Do not add any other material to the container. Do not wash down the drain. Do not breathe gas/fumes/vapor/spray. In case of insufficient ventilation, wear suitable respiratory equipment. Keep container tightly closed and dry. Manipulate under an adequate fume hood. Take precautionary measures against electrostatic discharges. Ground the container while dispensing. Ground all equipment containing material. Use only explosion proof equipment. Use non-sparking tools. Watch for accumulation in low confined areas. Empty containers may contain a hazardous residue. Handle and open container with care. Take off immediately all contaminated clothing. This product must be manipulated by qualified personnel. Do not get in eyes, on skin, or on clothing. Wash well after use. In accordance with good storage and handling practices. Do not allow smoking and food consumption while handling. In case of accident or if you feel unwell, seek medical advice immediately (show the label when possible.).

Section IX. Protective Measures

Protective clothing Splash goggles. Impervious rubber gloves, apron, coveralls, and/or other resistant protective clothing. Sufficient to protect skin. Have available and use as appropriate: face shields, rubber suits, aprons, and boots. A OSHA/MSHA jointly approved respirator is advised in the absence of proper environmental controls. Do not wear contact lenses. Make eye bath and emergency shower available. Ensure that eyewash station and safety shower is proximal to the work-station location.

Engineering controls Use only in a chemical fume hood. Use adequate ventilation. Do not use in unventilated spaces.

Section X. Other Information

Special Precautions or Toxic! comments Combustible liquid! Severe irritant! May cause burns. Do not breathe vapor. Avoid all contact with the product. Avoid prolonged or repeated exposure. Use only in a chemical fume hood. Keep away from heat, sparks and flame. Handle and open container with care. Container should be opened only by a technically qualified person. RTECS NO: HE4375000 (Decyl alcohol).



NFPA

Prepared by MSDS Department/Département de F.S..

Validated 20-Oct-2004

) Telephone# (514) 489-5711

While the company believes the data set forth herein are accurate as of the date hereof, the company makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.



5501 Baker Road Baytown, Texas 77520
P O Box 1516 Baytown, Texas 77522
Telephone : 281/424-4505 Fax: 281/424-3532

Decahydronaphthalene (DHN)

1 VL # 100
Detergent
HOT Wash
Cold Rinse
DRY, D
ASAP

MATERIAL SAFETY DATA SHEET

Decahydronaphthalene (DHN)

PRODUCT IDENTIFICATION

Chemical Name: Decahydronaphthalene

Chemical Family: Aromatic hydrocarbon, C₁₀H₁₈

Trade Name: DHN

Synonyms: Decalin

Revision Date: 04/16/03

Manufacturer /Distributor: Advanced Aromatics, L.P. 5501 Baker Road Baytown, TX 77520

EMERGENCY CONTACT: (281) 424-4505 24 hour number: (281) 424-9566 Chemtree: (800) 424-9300

HAZARDOUS COMPONENTS

The following chemical components have been determined to be hazardous under OSHA's Hazard Communication Std. 29 CFR 1910.1200, and are listed in Table Z-1, Z-2, and/or Z-3 1910.1000 (Toxic and Hazardous Substances).

CAS No.	Material or Component	Percentage
91-17-8	Decahydronaphthalene, mixture of Cis and Trans	95 - 99%
119-64-2	1,2,3,4-Tetrahydronaphthalene	< 1%

PHYSICAL DATA (TYPICAL)

Specific Gravity (Water = 1): 0.8927 - 0.87 @ 68 °F

Boiling Point: 368 °F

Vapor Density (Air=1): 4.55

Freezing Point: -46 °F

Vapor Pressure (PSIA): 1.0 mmHg @ 100 °F

Evaporation Rate (Butyl Acetate = 1): < 1

Solubility In Water: insoluble in water, soluble in alcohol and ether

Viscosity: 1.348 cp @ 68 °F

Physical Description: clear colorless liquid with an aromatic odor.

FIRE AND EXPLOSION DATA

Flash Point: 136 °F Autoignition Temperature : 482 °F

Flammable Limits in Air % by Volume: Lower: 0.7 Upper: 4.9

Extinguishing Media: Use dry chemical, carbon dioxide, water spray and foam suitable for hydrocarbon use.

Special Fire Fighting Procedures: Flammable and toxic vapors given off in a fire. Wear complete personal protection equipment. SCBA required. Keep area controlled to prevent exposures to people downwind.

Unusual Fire and Explosion Hazard: explosive air mixtures are created in a fire situation

REACTIVITY DATA

Stability: Product is stable under normal storage conditions, however; prolonged exposure to oxygen can cause Hydroperoxide formation.

Conditions to Avoid: Extreme heat, sources of ignition, strong oxidizers, and long-term storage with oxygen in the vapor space.

Incompatibility: Strong Oxidizers.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition Products When Heated: Flammable vapors are emitted creating carbon dioxide and toxic fumes of carbon monoxide.

HMIS RATING

NFPA 704 Rating: 0 - Insignificant 1 - Slight 2 - Moderate 3 - High 4 - Extreme

Health: 2 Flammability: 2 Reactivity: 0 Special Hazard: None Personal Protection: B

HEALTH HAZARD INFORMATION

Symptoms Of Exposure:

Symptoms of exposure to this product may include irritation to the skin, eyes, mucous membranes and respiratory tract, dizziness, narcosis, suffocation, lower blood pressure, CNS depression, nausea and headache. Prolonged skin contact may result in dermatitis. Eye contact may result in temporary corneal damage.

Health Effects:

ACUTE - Eye, skin, respiratory system, and mucous membrane irritation accompanied by headache and nausea. Liver and kidney damage caused by acute ingestion.

CHRONIC - Permanent damage to the skin, liver, kidneys due to overexposure.

Ingestion: Do not take internally. Seek physician advice immediately.

Skin: Avoid prolonged or repeated skin contact.

Inhalation: Avoid inhalation of vapors. Use in well ventilated areas.

Eyes: Avoid chemical contact with the eyes.

Special Medical Conditions Aggravated by Exposure: None known.

Primary Route of Entry: Inhalation of vapors and skin contact.

Exposure Limits: None Established for this product

(Naphthalene) OSHA PEL- 10 ppm (50 mg/m³) TWA for 8-hour workday, STEL = 15 ppm (75 mg/m³).
ACGIH TLV- 10 ppm (52 mg/m³) TWA for 8-hour workday.

Carcinogen Status: Not listed on (NTP) National Toxicology Program Annual Report on Carcinogens or (IARC) International Agency for Research on Cancer " Monographs", and is not classified by OSHA as a carcinogen.

NTP studies TR-410 and TR-500 show evidence of increased tumor growth in rodents after inhalation of Naphthalene.

Toxicity:

NIOSH REGISTRY NUMBER: QJ3150000

TOXICITY:

Dose	mode	specie	amount / units
Mild Irritant	Draize Test (eye)-	Rabbit	500 mg/24 hr.
Mild Irritant	Draize Test (skin)-	Rabbit	10 mg/24 hr.
LD50	Oral	Rat	4170 mg/kg

*** "Limit of Liability", see the statement on Page 5.

LC50	Inhalation -	Rat	710 ppm/4H
LC50	Inhalation -	mus	1085 ppm/4H
Irritant TCLO	Inhalation -	Human	100 ppm

ARCINOGENICITY:

Tumorigenic Data: No test data available

NTP carcinogenicity studies: No test data available for THN, but Naphthalene is studied in TR-410 and TR-500 by the NTP

MUTATION DATA:

No test data available

TERATOGENICITY:

No test data available

FIRST AID

Ingestion: Do not induce vomiting. Immediately seek medical attention.

Skin: Remove soiled clothing and wash with soap and water. Seek medical attention if irritation develops or persists.

Inhalation: Remove to fresh air. If breathing irregular, administer oxygen. Immediately seek medical attention.

Eyes: Flush eyes with water for at least 15 minutes. Immediately seek medical attention.

SPILL OR LEAK PROCEDURES / WASTE DISPOSAL

In Case of a Transportation Accident, Contact CHEMTREC at 1-800/424-9300.

IN CASE OF SPILLS OR RELEASE: Refer to DOT NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK for handling information. For small spill, use solid absorbent and shovel into disposal container. For large spills, dike the area to facilitate salvage or disposal. Shut off ignition sources and avoid breathing vapors. Avoid runoff into sewers and advise authorities.

Waste Disposal Method: Adhere to all local, state, and federal regulations. See regulatory information below.

Disposal: If this product becomes a waste, it must be disposed of as required by applicable state and federal laws.

SPECIAL PROTECTION INFORMATION

Respiratory Protection: Organic vapor cartridge respirator with particulate filter, or SCBA.

Gloves: Non-permeable Nitrile rubber with durable construction to match the task.

Eyes: Chemical splash goggles or face shield.

Ventilation: Use local exhaust as required to control exposure. Electrical classification of equipment should be considered.

SPECIAL PRECAUTIONS

Storage and Handling: Product should be stored in closed containers under nitrogen atmosphere and located in a cool dry location, away from source of ignition and oxidizing agents. Avoid breathing vapors and mists, along with prolonged skin contact.

TRANSPORTATION INFORMATION

proper shipping name / hazard class may vary by packaging, properties, and mode of transportation.

proper shipping names are:

ALL TRANSPORTATION MODES: Decahydronaphthalene

AIR TRANSPORTATION:
(IATA / ICAO) Decahydronaphthalene

MARINE TRANSPORTATION:
(IMDG / IMO) Decahydronaphthalene

UN/ID NO.: UN1147

HAZARD CLASS - PRIMARY: 3 (Flammable Liquid)

PACKING GROUP: III

CARGO AIRCRAFT LIMIT: 220 L

PASSENGER AIRCRAFT LIMIT: 60 L

FLASH POINT: 136 °F

TECHNICAL NAME(s): Decahydronaphthalene, 1,2,3,4-Tetrahydronaphthalene

RQ LBS. (Per pkg.): N/A

RQ COMPONENTS (s): None

MARINE POLLUTANT (s): None

REGULATORY INFORMATION RIGHT-TO-KNOW PROGRAM

This product contains the following toxic chemicals subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 and 40 CFR472.

CAS No.	Material or Component	% by Weight
91-17-8	Decahydronaphthalene, mixture of Cis and Trans	95 - 99%
119-64-2	1,2,3,4-Tetrahydronaphthalene	< 1 %

THE FOLLOWING FEDERAL REGULATIONS APPLY TO THIS PRODUCT:

OSHA HAZARD COMMUNICATION STD: 29CFR 1910.1200, 29 CFR 1910.1000 Table Z-1, Z-2, and/or Z-3.

None established for Decahydronaphthalene

Based on a hazard evaluation, the following components in this product are hazardous for the reasons listed below.

- Immediate (acute) health hazard
- Delayed (chronic) health hazard
- xx--Fire Hazard
- Sudden release of pressure hazard
- Reactive hazard

ERCLA, 40 CFR 117,302:

This product contains no reportable quantity (RQ) substances, requiring reporting to the National Response Center, Washington D.C. (1-800-424-8802). There may also be other state and local requirements to report spills.

SARA TITLE III:

Section 302 - This product does not contain any components regulated under SARA TITLE III, Section 302 (Extremely Hazardous Substance).

TOXIC SUBSTANCE CONTROL ACT (TSCA): The component(s) in this product are on the TSCA Inventory.

***ALL INFORMATION ON THIS MSDS MUST BE INCLUDED IN ALL MSDS THAT ARE
COPIED AND DISTRIBUTED FOR THIS MATERIAL.***

This information is provided for the customers of Advanced Aromatics; however, it does not address in detail the use, storage or handling of the product. Users of the product, considering their use, storage or handling of the product, may need to develop additional procedures. The information should not be relied on to insure compliance by the customer with any federal, state or local legal requirements. Information provided herein, are not product specifications.

Method of control: None

PRODUCT:

[illegible]

N/A - Not published in ACGIH

N/A* - Published value in ACGIH is based on particulate. Due to the nature of the cleaning process, emission of particulate will not occur with this product.

Note: Water is not a regulated pollutant.

(2) Exemption Allowables:	<u>lb/hr</u>	<u>ton/yr</u>
106.261	1.0	10.0

106.262 E = L/K 5.0
L = TLV (mg/m^3)
K = 212.6 Extrapolated based on distance of 190 feet.

Flare = 98 % Control efficiency: 100 %
None = 0 %

H:\client\hoyer\eval\^



MATERIAL SAFETY DATA SHEET

CRUDE GLYCERINE

Section 1 – Product and Company Information

Green Earth Fuels of Houston
5151 San Felipe St.
Suite 1390
Houston, TX 77056

For Product Information
713.621.3336

Emergency Phone Number
713.621.3336

Chemical Name or Synonym
Crude Glycerine, Crude Glycerol, 80% Glycerine

Product Class
Glycerine, Crude

Code Number
102

MSDS Revision Date
01/29/2007

MSDS No.
GEFH-EHS-102

MSDS Origination Date
01/26/2007

MSDS Revision No.
01

Section 2 – Chemical Composition

<u>Component</u>	<u>CAS No.</u>	<u>Concentration (% wt)</u>
Glycerine (1,2,3-trihydroxypropane)	56-81-5	80-93
Water	7732-18-5	2-20
Free Fatty Acids	112-80-1	0-10
Fatty Acid Methyl Esters	68990-52-3	0-10
Sodium Chloride	7647-14-5	2-7
Methanol	67-56-1	0.1-0.5

Section 3 – Hazards Identification

Potential Health Effects:

Acute Eye:

May irritate; will not damage eyes.

Acute Skin:

May irritate, may absorb into skin but toxic effects unlikely.

Acute Inhalation:

Product mist may be slightly irritating

Acute Ingestion:

May be harmful; large amounts may cause diarrhea.

Section 4 – First Aid Measures

First Aid Measures for Accidental:

Eye Exposure:

Wash eyes with plenty of water, holding eyelids open. Seek medical assistance promptly if there is any persistent irritation.

Skin Exposure:

Wash with soap and plenty of water. Remove contaminated clothing and do not reuse until thoroughly cleaned or laundered. Seek medical help promptly if there is persistent itching or redness in the affected area.

Inhalation:

Remove from contaminated area promptly. Seek medical help promptly if there is difficulty in breathing.

Ingestion:

Give plenty of water to dilute product. Do not induce vomiting (NOTE below). Keep victim quiet. If vomiting occurs, lower victim's head below the hips to prevent inhalation of vomited material. Seek medical help.



MATERIAL SAFETY DATA SHEET

CRUDE GLYCERINE

Section 5 – Fire Fighting Measures

Fire Hazard Data:

Flashpoint: 160°C (320°F)

Autoignition: 400°C (752°F)

Flammability Limits (% v/v): 0.9

Extinguishing Media:

Water spray, carbon dioxide, Dry chemical powder or appropriate foam.

Special Fire Fighting Procedures:

Wear self contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Unusual Fire and Explosion Hazards:

May emit toxic fumes (Acrolin) under fire conditions.

Section 6 – Accidental Release Measures

Cleanup and Disposal of Spill:

Wear respirator, chemical safety goggles, rubber boots and chemical gloves. Absorb with sand or vermiculite and place in closed containers for disposal. Ventilate spill area and wash after removal of material.

Section 7 – Handling and Storage

Handling and Storage:

Store in a cool, dry environment. Product is very hygroscopic and water content may increase when exposed to air (particularly at higher temperatures).

Section 8 – Exposure Controls/Personal Protection Equipment

Exposure Guidelines

<u>Component</u>	<u>ACGIH</u>	<u>OSHA - PELs</u>	<u>Other</u>
Glycerine	10 mg/m ³ (mist)	10 mg/m ³ (mist)	N/A
Water	Not Established	Not Established	N/A
Free Fatty Acids	Not Established	Not Established	N/A
Fatty Acid Methyl Esters	Not Established	Not Established	N/A
Sodium Chloride	Not Established	Not Established	N/A
Methanol	200ppm TWA	200ppm TWA	200ppm (NIOSH) TWA

Engineering Controls:

Provide exhaust ventilation when heated or exposed to mist conditions. Safety shower and eye bath, mechanical exhaust required.

Respiratory Protection:

Avoid inhalation, use NIOSH/OSHA approved respirator around airborne vapor or mist.

Eye/Face Protection:

Avoid contact with eyes; Safety glasses with eye shields should always be worn, chemical compatible safety goggles recommended.



MATERIAL SAFETY DATA SHEET

CRUDE GLYCERINE

Skin Protection:

Avoid contact with skin and/or clothing; wear chemical compatible safety gloves when handling.

Section 9 – Physical and Chemical Properties

Physical Appearance: Light amber to dark brown translucent liquid.

Odor: Slight to moderate musty odor.

pH: 5.0 to 8.0

Specific Gravity: 1.205 (25°C)

Water Solubility: Miscible.

Melting Point: 17.9°C

Freezing Point: <10°C

Boiling Point: 190°C (374°F)

Vapor Pressure: <1 mm Hg

Vapor Density: 3.17 (air=1)

Percent Volatiles by Weight: 0.1 to 0.5

Viscosity: 1490 centipoise (20°C)

Section 10 – Stability and Reactivity

Chemical Stability:

Stable.

Conditions to Avoid:

Avoid excessive heat, open flame. Protect from moisture, strong bases and oxidizing agents.

Materials/Chemical Incompatibility:

Strong oxidizing agents.

Hazardous Decomposition Products:

Carbon monoxide and carbon dioxide.

Hazardous Polymerization:

Will not occur.

Section 11 – Toxicological Information

LD50 - LC50 Mixture:

LD50 (oral, rat) is 12,600 mg/kg.

Route of Entry:

Inhalation: No

Skin: No

Ingestion: No



MATERIAL SAFETY DATA SHEET

CRUDE GLYCERINE

Acute/Chronic Effects:

May cause skin irritation, may be harmful if absorbed through skin.

May cause eye irritation.

May be harmful if inhaled.

Material may be irritating to respiratory system.

May be harmful if swallowed. Mildly toxic, may cause gastrointestinal discomfort.

Carcinogenicity:

NTP: No

IARC: No

OSHA: No

Signs/Symptoms of Overexposure:

Irritation, nausea, general malaise.

Section 12 – Ecological Information

Spill containment:

Create dyke to control spill and prevent/reduce environmental contamination.

Handling Spill:

Recover liquid with suitable pumps into holding vessel, absorb remaining with inert absorbent. Remove Absorbent to container for disposal.

Environmental Impact:

Product cannot accumulate in living tissue, this product is readily and rapidly biodegradable in the presence of oxygen.

Section 13 – Disposal Considerations

Waste Disposal Method:

Contact a licensed professional waste disposal service to dispose of this product. Product may be blended with suitable solvent and burned by chemical incineration at an approved facility. Observe all Federal, State and Local environmental reporting and regulations.

Section 14 – Transportation Information

US Department of Transportation Shipping Name:

Crude Glycerine

US Department of Transportation Shipping Code:

N/A

Section 15 – Regulatory Information

Federal Regulations:

Sara Title III Hazard Classes:

Fire Hazard: None Noted

Reactive Hazard: None Noted

Release of Pressure: None Noted

Acute Health Hazard: None Noted

Chronic Health Hazard: None Noted

TSCA:



MATERIAL SAFETY DATA SHEET

CRUDE GLYCERINE

Federal Regulations:

Product is on the TSCA Inventory List.

Other Regulations:

N/A

Section 16 – Other Information

Key Legend

N/A – Not Applicable

ND – Not Determined

ACGIH – American Conference of Governmental Industrial Hygienists

OSHA – Occupational Safety and Health Administration

TLV – Threshold Limit Value

TWA – Time Weighted Average

STEL – Short Term Exposure limit

NTP – National Toxicology Program

IARC – International Agency for Research on Cancer

The information contained herein is based on the data available to us and is believed to be correct. However, Green Earth Fuels of Houston, LLC. makes no warranty, expressed or implied regarding the accuracy of this data or the results to be obtained from the use thereof.

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **CRUDE OIL**

Revision Date: 05-Jan-2006

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CRUDE OIL
Synonyms: None
Chemical Family: Organic hydrocarbon
Application: Sample Kit
Manufacturer/Supplier: Halliburton Energy Services
P.O. Box 1431
Duncan, Oklahoma 73536-0431
Emergency Telephone: (281) 575-5000
Prepared By: Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Benzene	71-43-2	< 1	0.5 ppm	1 ppm
Hydrogen sulfide	7783-06-4	< 1	10 ppm	20 ppm
Aromatic solvent	8002-05-9	60 - 100%	Not applicable	500 ppm

3. HAZARDS IDENTIFICATION

Hazard Overview

May cause eye and skin irritation. May be harmful if swallowed. Potential carcinogen.
May be harmful if inhaled. Flammable.

4. FIRST AID MEASURES

Inhalation If inhaled, remove to fresh air. If not breathing give artificial respiration, preferably mouth-to-mouth. If breathing is difficult give oxygen. Get medical attention.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Get medical attention! If vomiting occurs, keep head lower than hips to prevent aspiration.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	20 - 72
Flash Point/Range (C):	-6.7 - 22.8
Flash Point Method:	TCC
Autoignition Temperature (F):	590
Autoignition Temperature (C):	310
Flammability Limits in Air - Lower (%):	1.1
Flammability Limits in Air - Upper (%):	6.0

Fire Extinguishing Media Carbon Dioxide, Dry Chemicals, Foam.

Special Exposure Hazards Decomposition in fire may produce toxic gases. Use water spray to cool fire exposed surfaces. Vapors are heavier than air and may accumulate in low areas. Vapors may travel along the ground to be ignited at distant locations.

Special Protective Equipment for Fire-Fighters Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

NFPA Ratings: Health 1, Flammability 3, Reactivity 0
HMIS Ratings: Flammability 3, Reactivity 0, Health 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment.

Environmental Precautionary Measures Prevent from entering sewers, waterways, or low areas.

Procedure for Cleaning / Absorption Isolate spill and stop leak where safe. Contain spill with sand or other inert materials. Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid breathing vapors. Wash hands after use. Launder contaminated clothing before reuse.

Storage Information Store away from oxidizers. Store in a cool well ventilated area. Keep container closed when not in use.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls Use in a well ventilated area. Local exhaust ventilation should be used in areas without good cross ventilation.

Respiratory Protection Not normally needed. But if significant exposures are possible then the following respirator is recommended:
Organic vapor respirator.
Acid gas respirator.

Hand Protection Nitrile gloves.

Skin Protection Rubber apron.

Eye Protection Chemical goggles; also wear a face shield if splashing hazard exists.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Color:	Yellow to Green or Black
Odor:	Rotten egg
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	0.78 - 0.97
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	Not Determined
Boiling Point/Range (F):	< 100
Boiling Point/Range (C):	< 38
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	-60 - -20
Vapor Pressure @ 20 C (mmHg):	100-500
Vapor Density (Air=1):	3 - 4
Percent Volatiles:	Not Determined
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	Insoluble
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	< 15
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None anticipated
Incompatibility (Materials to Avoid)	Strong oxidizers.
Hazardous Decomposition Products	Carbon monoxide and carbon dioxide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation. May cause chemical pneumonia. Excessive inhalation causes headache, dizziness, nausea and incoordination.
Skin Contact	Causes drying of the skin. Prolonged or repeated contact may cause skin irritation.
Eye Contact	May cause eye irritation.
Ingestion	Aspiration into the lungs may cause chemical pneumonitis including coughing, difficulty breathing, wheezing, coughing up blood and pneumonia, which can be fatal.
Aggravated Medical Conditions	Skin disorders. Respiratory disorders.
Chronic Effects/Carcinogenicity	Contains petroleum distillates which have been shown to cause skin cancer in laboratory animals.
Other Information	None known.

Toxicity Tests

Oral Toxicity:	LD50: 4300 mg/kg (Rat)
Dermal Toxicity:	LD50: > 2000 mg/kg (Rabbit)
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined
Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Not determined

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Slowly biodegradable
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	If empty container retains product residues, all label precautions must be observed. Transport with all closures in place. Return for reuse or disposal according to national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum)
NAERG 128

Canadian TDG

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum)

ADR

UN1267, Petroleum Crude Oil, 3, II

CRUDE OIL
Page 4 of 6

Air Transportation

ICAO/IATA

UN1267, Petroleum Crude Oil, 3, II

Sea Transportation

IMDG

Petroleum Crude Oil, 3, UN1267, II, (-6.7 C minimum)

EmS F-E, S-E

Other Shipping Information

Labels:

Flammable Liquid

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory All components listed on inventory.

EPA SARA Title III Extremely Hazardous Substances Not applicable

EPA SARA (311,312) Hazard Class Acute Health Hazard

EPA SARA (313) Chemicals This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).

EPA CERCLA/Superfund Reportable Spill Quantity For This Product Not applicable.

EPA RCRA Hazardous Waste Classification If product becomes a waste, it does meet the criteria of a hazardous waste as defined by the US EPA, because of:
Ignitability D001

California Proposition 65 The California Proposition 65 regulations apply to this product.

MA Right-to-Know Law One or more components listed.

NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory.

WHMIS Hazard Class B2 Flammable Liquids
D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS
Not applicable

Additional Information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

*****END OF MSDS*****

MATERIAL SAFETY DATA SHEET



Page: 1
DATE PREPARED: 11/22/1999
MSDS No: L001
Citric Acid Crystal

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Citric Acid Crystal
Product Code: L001
Product Name: Citric Acid, Anhydrous
Chemical Family: Organic acid, Chelant
Molecular Formula: $\text{HOC}(\text{COOH})(\text{CH}_2\text{COOH})_2$

MANUFACTURER:

HydroChem Industrial Services, Inc.
900 Georgia Ave.
Deer Park, TX 77536
Customer Service: (800) 934-9376

24 HR. EMERGENCY TELEPHONE
NUMBERS:

Emergency Contact: HydroChem ER
Emergency Phone: (800) 569-4889

COMMENTS:

EFFECTIVE DATE: 1/1/00

2. COMPOSITION/INFORMATION ON INGREDIENTS

	wt. %	CAS Registry #
Citric Acid, Anhydrous	100	77-92-9

COMMENTS:

Product Exposure Limits:
Nuisance Dust - OSHA PEL: 15 mg/m³ ACGIH TLV: 10 mg/m³
Respirable Fraction - OSHA PEL: 5 mg/m³

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS:

No hazard in normal industrial use.
Dust may be irritating to eyes and respiratory tracts.

4. FIRST AID MEASURES

EYES:

Immediately flush eyes with water for 30 minutes while holding eyelids open. Seek medical attention.



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Citric Acid Crystal

SKIN:

Immediately wash with soap and water. Rinse thoroughly. Seek medical attention if effects occur.
Launder contaminated shoes and clothing before reuse.

INGESTION:

If swallowed, give 2 glasses of milk (preferred) or water and consult physician.

INHALATION:

Remove to fresh air. See a doctor if effects occur.

5. FIRE FIGHTING MEASURES

Flashpoint and Method: >200°F 93°C
Flammable Limits: Not determined
Autoignition Temperature: Not Determined

EXTINGUISHING MEDIA:

Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.

HAZARDOUS COMBUSTION PRODUCTS:

Oxides of carbon and harmful organic chemical fumes.

FIRE FIGHTING EQUIPMENT:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective clothing to prevent contact with skin and eyes.

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES:

Scoop into appropriate containers.
Flush residual with plenty of water.

7. HANDLING AND STORAGE

GENERAL PROCEDURES:

Refer to Section 8.

STORAGE:

No special precautions required.
Avoid wetting.
Store away from oxidizers.



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Citric Acid Crystal

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Ventilation - General and local ventilation are required.

PERSONAL PROTECTION

EYES AND FACE:

Chemical goggles required and an eye wash in work area.

RESPIRATORY:

Use NIOSH approved respirator with dust and mist protection.

PROTECTIVE CLOTHING:

Clean body covering and chemical resistant gloves.

OTHER USE PRECAUTIONS:

Safety shower and eye wash in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder

Color: White

pH: 0.6

Percent Volatile: Not Established

Vapor Pressure: Not Available

Melting Point: 307°F 153°C

Solubility in Water: Soluble

Specific Gravity: 1.54

COMMENTS:

pH: pH listed above is for a 50% aqueous solution

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

HAZARDOUS DECOMPOSITION:

When heated strongly or burned, oxides of carbon and harmful organic chemical fumes are released.

INCOMPATIBLE MATERIALS:

Oxidizers, bases. Can be explosive with metal nitrates.



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Citric Acid Crystal

11. TOXICOLOGICAL INFORMATION

ACUTE

Eyes: Severe irritant. Causes pain and redness. Prolonged or repeated contact may cause mild burn.

Skin: Irritant. May cause pain, redness, dermatitis. Not likely to be absorbed in toxic amounts.

Ingestion: No effect expected. Swallowing large amounts may cause illness.

Inhalation: Irritant. May cause pain and coughing.

TARGET ORGAN(S):

Skin

GENERAL COMMENTS:

Carcinogens: Not listed by IARC, USA NTP, or USA OSHA.

COMMENTS:

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented in this document. See the actual entry in RTECS for complete information.

RTECS Number: GE730 000

LC(50) = 11.7 g/kg on rats (for anhydrous citric acid)

12. ECOLOGICAL INFORMATION

GENERAL COMMENTS:

Degradability: Biodegradable.

Fish Toxicity: LC50 (P. promelas) = 150 ppm

COMMENTS:

BOD = 0.48 p/p; COD = 0.70 p/p (68% degradation in 5 days)

13. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Dispose of in accordance with ALL applicable federal, state and local regulations.

EMPTY CONTAINER:

Send empty bags to sanitary landfill. Reroll or other types of containers unuseable by puncturing or crushing and sanitary landfill unless prohibited by local regulations.

RCRA/USEPA WASTE INFORMATION:

This material is not a RCRA regulated material.



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COMMENTS:

Always follow ALL applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: Citric Acid, Anhydrous - Nonregulated
Reportable Quantity (RQ) Under CERCLA: None
Placards: None
Label: None

15. REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

Title III Notes: This product contains no substances which are defined as toxic chemicals under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372).

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Status: All components of this material are on the TSCA inventory.

STATE REGULATIONS

PROPOSITION 65 STATEMENT:

This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

16. OTHER INFORMATION

REASON FOR ISSUE:

Biannual review

Approved by: Charles M Maddin, PhD, FAIC

Approval date: 11/22/1999



Page: 6

DATE PREPARED: 11/22/1999

MSDS No: L001

Citric Acid Crystal

REVISION SUMMARY

Revision #: 5

This MSDS replaces the October 05, 1999 MSDS. Any changes in information are as follows:

In Section 1

Date Prepared Section 1 Footnotes

In Section 9

(pH) (from) (pH) Comments

In Section 15

TSCA Status

NFPA CODES

Fire: 1 Health: 1 Reactivity: 0

HMIS CODES

Fire: 1 Health: 1 Reactivity: 0

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MATERIAL SAFETY DATA SHEET



Page: 1
DATE PREPARED: 12/22/2000
MSDS No: M002
Caustic Soda, flake or bead

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Identifier: Caustic Soda, flake or bead
Product Code: M002
Product Name: Sodium Hydroxide
Chemical Family: Alkali
Molecular Formula: NaOH
Generic Name: Caustic Soda, Lye Soda, Lye

MANUFACTURER:
HydroChem Industrial Services, Inc.
900 Georgia Ave.
Deer Park, TX 77536
Customer Service: (800) 934-9376

24 HR. EMERGENCY TELEPHONE NUMBERS:
Emergency Contact: HydroChem ER
Emergency Phone: (800) 569-4889

2. COMPOSITION/INFORMATION ON INGREDIENTS

	<u>wt. %</u>	<u>CAS Registry #</u>
Sodium Hydroxide	100	1310-73-2

OSHA HAZARDOUS COMPONENTS (29 CFR 1910.1200)

	<u>EXPOSURE LIMITS</u>		<u>Supplier</u>
	<u>OSHA PEL</u>	<u>ACGIH TLV</u>	
Sodium Hydroxide	2 mg/m3	2 mg/m3 - STEL/ceiling	

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE:

White powder

IMMEDIATE CONCERNS:

Corrosive.
May react violently with water.
Do not get in eyes, on skin or clothing.

MEDICAL CONDITIONS AGGRAVATED:

Persons with pre-existing skin disorders, eye problems or impaired pulmonary function may be at increased risk from exposure.



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MSDS No: M002
Caustic Soda, flake or bead

ROUTES OF ENTRY:

Ingestion, inhalation and eye or skin contact.

4. FIRST AID MEASURES

EYES:

Immediately flush eyes with water for 30 minutes while holding eyelids open. Seek medical attention.

SKIN:

Immediately wash with soap and water. Rinse for 30 minutes. See a doctor at once. Destroy contaminated shoes and clothing.

INGESTION:

DO NOT induce vomiting. Drink large quantities of milk (preferred) or water and give milk of magnesia. Take to hospital at once.

INHALATION:

If effects occur, remove to fresh air. See a doctor at once. If breathing has stopped, begin artificial respiration.

5. FIRE FIGHTING MEASURES

Flashpoint and Method: Not Applicable

Flammable Limits: Not applicable

Autoignition Temperature: None

EXTINGUISHING MEDIA:

Use alcohol foam, carbon dioxide, dry chemical or water spray when fighting fires involving this material.

OTHER CONSIDERATIONS:

Large amounts of heat generated when initially diluted with water.

EXPLOSION HAZARDS:

May release hydrogen gas (explosive) when in contact with aluminum and similar metals.

FIRE FIGHTING EQUIPMENT:

As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective clothing to prevent contact with skin and eyes.



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MSDS No: M002

Caustic Soda, flake or bead

6. ACCIDENTAL RELEASE MEASURES

GENERAL PROCEDURES:

Scoop into appropriate containers.

Flush residual with plenty of water.

7. HANDLING AND STORAGE

GENERAL PROCEDURES:

Refer to Section 8.

STORAGE:

No special precautions required.

Avoid wetting.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

Ventilation - General and local ventilation are required.

PERSONAL PROTECTION

EYES AND FACE:

Chemical goggles required and an eye wash in work area.

RESPIRATORY:

Use NIOSH approved respirator with dust and mist protection.

PROTECTIVE CLOTHING:

Face shield, boots, protective suit and impervious (neoprene) gloves.

OTHER USE PRECAUTIONS:

Safety shower and eye wash in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder

Color: White

pH: 13

Melting Point: 604°F 318°C

Solubility in Water: Soluble

Specific Gravity: 2.13 (water=1)



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MSDS No: M002
Caustic Soda, flake or bead

COMMENTS:

pH: pH listed above is for a 1% solution

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

HAZARDOUS DECOMPOSITION:

None

INCOMPATIBLE MATERIALS:

Aluminum, magnesium, water, organic materials, acids, copper, organic halogens, zinc, tin, bronze, brass

11. TOXICOLOGICAL INFORMATION

ACUTE

Eyes: Corrosive. Rapidly causes pain, burns, corneal injury. May cause permanent damage and blindness.

Skin: Corrosive. Rapidly causes pain, burns, redness, swelling and damage to tissue. Not likely to be absorbed in toxic amounts.

Ingestion: Corrosive. Causes pain and severe burns to mouth, throat and stomach.

Inhalation: Corrosive. Short exposure can injure lungs, throat, mucous membranes and reduce lung capacity. Causes pain, burns, choking, and coughing.

TARGET ORGANS:

Skin, Eyes

GENERAL COMMENTS:

Carcinogens: Not listed by IARC, USA NTP, or USA OSHA.

COMMENTS:

Only selected Registry of Toxic Effects of Chemical Substances (RTECS) data is presented in this document. See the actual entry in RTECS for complete information.

RTECS Number: WB4900000

12. ECOLOGICAL INFORMATION

GENERAL COMMENTS:

Degradability: Not biodegradable.

Fish Toxicity: Low toxicity to fish (when neutralized).



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MSDS No: M002
Caustic Soda, flake or bead

13. DISPOSAL CONSIDERATIONS

PRODUCT DISPOSAL:

Ship via permitted waste hauler to permitted hazardous waste disposal facility for landfilling.

EMPTY CONTAINER:

Send empty bags to sanitary landfill. Render other types of containers unusable by puncturing or crushing and sending to a sanitary landfill unless prohibited by local regulations.

RCRA/USEPA WASTE INFORMATION:

RCRA Hazardous Waste Number: D002 (corrosive), D003 (reactive)

COMMENTS:

Always follow ALL applicable federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (DEPARTMENT OF TRANSPORTATION)

Proper Shipping Name: Sodium Hydroxide, solid

Hazard Class: 8

NA/UN Number: UN1823

Packing Group: II

Reportable Quantity (RQ) Under CERCLA: 1000 lb

Placards: Corrosive

Label: Corrosive - 8

SPECIAL SHIPPING NOTES:

Material is a HAZARDOUS MATERIAL AND HAZARDOUS SUBSTANCE. Add the letters RQ to the beginning of the shipping description if the RQ amount is met or exceeded in a single container.

15. REGULATORY INFORMATION

DOT Label Symbol and Statement of Hazard



DOT Corrosive



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DATE PREPARED: 12/22/2000
MSDS No: M002
Caustic Soda, flake or bead

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

Fire: No Pressure Generating: No Reactivity: No Acute: Yes Chronic: No

Title III Notes: This product contains no substances which are defined as toxic chemicals under the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (40 CFR Part 372).

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Reportable Spill Quantity: 1000 lb

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA Status: All components of this material are on the TSCA inventory.

STATE REGULATIONS

PROPOSITION 65 STATEMENT:

This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

16. OTHER INFORMATION

REASON FOR ISSUE:

Biannual review

Approved by: Charles M Maddin, PhD, FAIC

Approval date: 10/24/2000

REVISION SUMMARY

Revision #: 5

This MSDS replaces the October 19, 2000 MSDS. Any changes in information are as follows:

In Section 12

Ecological Comments

NFPA CODES

Fire: 0 Health: 3 Reactivity: 1

HMIS CODES

Fire: 0 Health: 3 Reactivity: 1 Protection: X



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DATE PREPARED: 12/22/2000

MSDS No: M002

Caustic Soda, flake or bead

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Material Safety Data Sheet

The Dow Chemical Company

Product Name: PROPYL CELLOSOLVE(TM) SOLVENT

Issue Date: 06/06/2006

Print Date: 12 Jun 2006

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name

PROPYL CELLOSOLVE(TM) SOLVENT

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number:

800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact:

989-636-4400

Local Emergency Contact:

989-636-4400

2. Hazards Identification

Emergency Overview

Color: Colorless

Physical State: Liquid

Odor: mild, sweet

Hazards of product:

WARNING! Combustible liquid and vapor. Causes eye irritation. Harmful if absorbed through skin. May cause skin irritation. May be harmful if inhaled. Vapor explosion hazard. Vapors may travel a long distance; ignition and/or flash back may occur. Isolate area. Keep upwind of spill. Stay out of low areas.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe eye irritation. May cause moderate corneal injury. Effects may include pain, marked redness and swelling.

Skin Contact: Prolonged contact may cause skin irritation with local redness.

Skin Absorption: Prolonged or widespread skin contact may result in absorption of harmful amounts.

* Indicates a Trademark

Inhalation: Prolonged excessive exposure may cause adverse effects. Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Observations in animals include: Red-coloured urine.

Ingestion: Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Effects of Repeated Exposure: In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Birth Defects/Developmental Effects: Has been toxic to the fetus in lab animals at doses toxic to the mother.

3. Composition Information

Component	CAS #	Amount
Ethylene glycol monopropyl ether	2807-30-9	> 99.0 %

4. First-aid measures

Eye Contact: Immediately flush eyes with water; remove contact lenses, if present, after the first 5 minutes, then continue flushing eyes for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Skin Contact: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing. Seek medical attention if symptoms occur or irritation persists. Wash clothing before reuse. Discard items which cannot be decontaminated, including leather articles such as shoes, belts and watchbands.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

Notes to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

Medical Conditions Aggravated by Exposure: Excessive exposure may aggravate preexisting liver and kidney disease. Repeated excessive exposure may aggravate preexisting blood disease (anemia).

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Stay upwind. Keep out of low areas where gases (fumes) can accumulate. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Eliminate ignition sources. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire

from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Small spills: Absorb with materials such as: Non-combustible material. Clay. Zorb-all®. Wash the spill site with large quantities of water. Large spills: Dike area to contain spill. Collect in suitable and properly labeled containers. Pump with explosion-proof equipment. If available, use foam to smother or suppress. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Eliminate all sources of ignition in vicinity of spill or released vapor to avoid fire or explosion. Isolate area. Keep unnecessary and unprotected personnel from entering the area. No smoking in area. Keep personnel out of low areas. Keep upwind of spill. Ventilate area of leak or spill. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Check area with combustible gas detector before reentering area. Ground and bond all containers and handling equipment. Vapor explosion hazard. Keep out of sewers. Refer to Section 7, Handling, for additional precautionary measures.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information. Material may float on water and any runoff may create an explosion or fire hazard if ignited.

7. Handling and Storage

Handling

General Handling: No smoking, open flames or sources of ignition in handling and storage area. Avoid contact with eyes, skin, and clothing. Avoid breathing vapor. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. Electrically ground and bond all equipment. Use of non-sparking or explosion-proof equipment may be necessary, depending upon the type of operation.

Other Precautions: Vapors are heavier than air and may travel a long distance and accumulate in low lying areas. Ignition and/or flash back may occur. Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers. Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Minimize sources of ignition, such as static build-up, heat, spark or flame. Keep container closed. Store in the following material(s): Carbon steel. Stainless steel. Do not store in: Aluminum. Copper. Galvanized iron. Galvanized steel.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Ethylene glycol monopropyl ether	Dow IHG	TWA	20 ppm SKIN
	Dow IHG	STEL	60 ppm SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Personal Protection

Eye/Face Protection: Use chemical goggles.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material when prolonged or frequently repeated contact could occur. Examples of preferred glove barrier materials include: Butyl rubber. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Natural rubber ("latex"). Neoprene. Nitrile/butadiene rubber ("nitrile" or "NBR"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration. For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure air line with auxiliary self-contained air supply. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Liquid
Color	Colorless
Odor	mild, sweet
Flash Point - Closed Cup	57 °C (135 °F) <i>ASTM D93</i>
Flammable Limits In Air	Lower: 1.3 %(V) <i>Literature</i> Upper: 15.8 %(V) <i>Literature</i>
Autoignition Temperature	235 °C (455 °F) <i>Literature</i>
Vapor Pressure	1.6 mmHg @ 20 °C <i>Literature</i>
Boiling Point (760 mmHg)	150 °C (302 °F) <i>Literature</i>
Vapor Density (air = 1)	3.6 <i>Literature</i>
Specific Gravity (H2O = 1)	0.912 20 °C/20 °C <i>Literature</i>
Freezing Point	-90 °C (-130 °F) <i>Literature</i>
Melting Point	No test data available
Solubility in Water (by weight)	100 % @ 20 °C
pH	No test data available
Molecular Weight	104 g/mol <i>Literature</i>
Octanol/Water Partition Coefficient	0.08 <i>Estimated</i>

Evaporation Rate (Butyl Acetate = 1) 0.2 Literature
Dynamic Viscosity 2.7 cps @ 20 °C Literature

10. Stability and Reactivity

Stability/Instability

Thermally stable at typical use temperatures.

Conditions to Avoid: Do not distill to dryness. Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

11. Toxicological Information

Acute Toxicity

Ingestion

LD50, Rat, male 3,089 mg/kg

Skin Absorption

LD50, Rat 876 mg/kg

LD50, Guinea pig 1,000 - 5,000 mg/kg

Inhalation

LC50, 6 h, Vapor, Rat, male > 2,132 ppm

Sensitization

Skin

Did not cause allergic skin reactions when tested in guinea pigs.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: blood (hemolysis) and secondary effects on the kidney and liver. Human red blood cells have been shown to be significantly less sensitive to hemolysis than those of rodents and rabbits.

Developmental Toxicity

Has been toxic to the fetus in lab animals at doses toxic to the mother. Did not cause birth defects in laboratory animals.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50).

Henry's Law Constant (H): 1.47E-8 atm*m3/mole; 25 °C Estimated

Partition coefficient, n-octanol/water (log Pow): 0.08 Estimated

Partition coefficient, soil organic carbon/water (Koc): 1 Estimated

Persistence and Degradability

Biodegradation under aerobic static laboratory conditions is high (BOD20 or BOD28/ThOD > 40%).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
2.16E-11 cm ³ /s		Estimated

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
13 %	66 %	100 %	

Chemical Oxygen Demand: 1.94 mg/mg**Theoretical Oxygen Demand:** 2.15 mg/mg**ECOTOXICITY**

Material is practically non-toxic to aquatic organisms on an acute basis (LC50/EC50 >100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged ToxicityLC50, fathead minnow (*Pimephales promelas*): > 1,000 mg/l**Aquatic Invertebrate Acute Toxicity**LC50, water flea *Daphnia magna*: > 5,000 mg/l**Toxicity to Micro-organisms**

EC50; bacteria, Growth inhibition: > 1,000 mg/l

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information**DOT Non-Bulk**

NOT REGULATED

DOT Bulk**Proper Shipping Name:** FLAMMABLE LIQUID, NOS**Technical Name:** ETHYLENE GLYCOL MONOPROPYL ETHER**Hazard Class:** 3 **ID Number:** UN 1993 **Packing Group:** PG III**IMDG****Proper Shipping Name:** FLAMMABLE LIQUID, NOS**Technical Name:** ETHYLENE GLYCOL MONOPROPYL ETHER**Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III**EMS Number:** F-E,S-E**ICAO/IATA****Proper Shipping Name:** FLAMMABLE LIQUID, NOS**Technical Name:** ETHYLENE GLYCOL MONOPROPYL ETHER**Hazard Class:** 3 **ID Number:** UN1993 **Packing Group:** PG III**Cargo Packing Instruction:** 310**Passenger Packing Instruction:** 309

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard	Yes
Delayed (Chronic) Health Hazard	Yes
Fire Hazard	Yes
Reactive Hazard	No
Sudden Release of Pressure Hazard	No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

This product contains the following substances which are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and which are listed in 40 CFR 372.

Component	CAS #	Amount
Ethylene glycol monopropyl ether	2807-30-9	>= 99.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Ethylene glycol monopropyl ether	2807-30-9	>= 99.0 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

European Inventory of Existing Commercial Chemical Substances (EINECS)

The components of this product are on the EINECS inventory or are exempt from inventory requirements.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information**Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact. Ask for a product brochure.

Hazard Rating System

NFPA	Health	Fire	Reactivity
	2	2	0

Recommended Uses and Restrictions

Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group. An oxygenated solvent - For industrial conversion as a raw material for manufacture of articles or goods. For industrial formulation for inclusion in a final product. For industrial use as a process aid. For industrial formulation as a process control material. For industrial consumption as a process raw material. For industrial consumption as a component of a reaction system.

Revision

Identification Number: 1982 / 1001 / Issue Date 06/06/2006 / Version: 4.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

MATERIAL SAFETY DATA SHEET



SECTION 1 - PRODUCT AND COMPANY INFORMATION

PPG Kansai Automotive Finishes (PKAF)
5875 New King Court
Troy, MI 48098

EMERGENCY PHONE NUMBERS (412) 434-4515 (U.S.)
(24 hours/day):

(514) 645-1320 (Canada)
01-800-00-21-400 (Mexico)
0532-3889090 (China)

TECHNICAL INFORMATION: 1-800-245-2590 (CLEVELAND, OH) 8:00 a.m. - 5:00 p.m. EST
PRODUCT SAFETY/MSDS INFORMATION: (412) 492-5555 7:00 a.m. - 4:30 p.m. EST
Product ID: CMS611 (0019-F1)
PRODUCT NAME: CELLOSOLVE ACETATE
SYNONYMS: None
ISSUE DATE: 05/26/2005
EDITION NO.: 1
CHEMICAL FAMILY: SOLVENT

EMERGENCY OVERVIEW:

Combustible. Keep away from heat, sparks, flames, and other sources of ignition. Do not smoke. CAUSES EYE IRRITATION. MAY CAUSE SLIGHT SKIN IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH THE SKIN. VAPOR AND/OR SPRAY MIST HARMFUL IF INHALED. HARMFUL IF SWALLOWED.

SECTION 2 - COMPOSITION INFORMATION

The following ingredient(s) marked with an "X" are considered hazardous under applicable U.S. OSHA and/or Canadian WHMIS regulations. If no ingredients are listed, then there are no U.S. OSHA and/or Canadian WHMIS hazardous ingredients in this product.

Material/ CAS Number	Percent	Hazardous
2-ETHOXYETHYLACETATE 111-15-9	60- 100	X

SECTION 3 - HAZARDS IDENTIFICATION

ACUTE OVEREXPOSURE EFFECTS

EYE CONTACT:

Causes eye irritation. Redness, itching, burning sensation and visual disturbances may indicate excessive eye contact.

SKIN CONTACT:

May cause slight skin irritation. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

SKIN ABSORPTION:

May be harmful if absorbed through the skin.

INHALATION:

Vapor and/or spray mist harmful if inhaled.

INGESTION:

Harmful if swallowed.

SIGNS & SYMPTOMS OF OVEREXPOSURE:

Repeated exposure to high vapor concentrations may cause irritation of the respiratory system and permanent brain and nervous system damage. Eye watering, headaches, nausea, dizziness and loss of coordination are indications that solvent levels are too high. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. Dryness, itching, cracking, burning, redness, and swelling are conditions associated with excessive skin contact.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Not applicable.

CHRONIC OVEREXPOSURE EFFECTS

Avoid long-term and repeated contact.

Repeated exposure to vapors above recommended exposure limits (see Section 8) may cause irritation of the respiratory system and permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal. This product contains an ethyl and/or methyl derivative of an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissues, birth defects, and reproductive organ damage.

The effects of long-term, low level exposures to this product have not been determined. Safe handling of this material on a long-term basis should emphasize the prevention of all contact with this material to avoid any effects from repetitive acute exposures. See Section 11, of this MSDS for a detailed list of chronic health effects information available on individual ingredients in this product.

SECTION 4 - FIRST AID MEASURES

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available.

EYE CONTACT:

Remove contact lens and pour a gentle stream of warm water through the affected eye for at least 15 minutes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary.

SKIN CONTACT:

Run a gentle stream of water over the affected area for 15 minutes. A mild soap may be used if available. If any symptoms persist, contact a poison control center, emergency room, or physician as further treatment may be necessary.

INHALATION:

Remove from area to fresh air. If symptomatic, contact a poison control center, emergency room or physician for treatment information.

INGESTION:

Gently wipe or rinse the inside of the mouth with water. Sips of water may be given if person is fully conscious. Never give anything by mouth to an unconscious or convulsing person. Do Not induce vomiting. Contact a poison control center, emergency room or physician right away as further treatment will be necessary.

SECTION 5 - FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

FLASHPOINT: 125 Degrees F (52 Degrees C)

FLASHPOINT TEST METHOD:

Pensky-Martens Closed Cup

UEL: Not Available.

LEL: 1.8

AUTOIGNITION TEMPERATURE:

Not Available.

EXTINGUISHING MEDIA:

Use National Fire Protection Association (NFPA) Class B extinguishers (carbon dioxide, dry chemical, or universal aqueous film forming foam) designed to extinguish NFPA Class II combustible liquid fires. Water spray may be ineffective. Water spray may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

PROTECTION OF FIREFIGHTERS:

Fire-fighters should wear self-contained breathing apparatus and full protective clothing.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Keep this product away from heat, sparks, flame, and other sources of ignition (i.e., pilot lights, electric motors, static electricity). Invisible vapors can travel to a source of ignition and flash back. Do not smoke while using this product. Keep containers tightly closed when not in use. Closed containers may explode when overheated. Do not apply to hot surfaces. Toxic gases may form when this product comes in contact with extreme heat. May produce hazardous decomposition products when exposed to extreme heat. Extreme heat includes, but is not limited to, flame cutting, brazing, and welding.

SECTION 6 - ACCIDENTAL RELEASE MEASURE

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

Provide maximum ventilation. Only personnel equipped with proper respiratory, skin, and eye protection should be permitted in the area. Remove all sources of ignition. Take up spilled material with sand, vermiculite, or other noncombustible absorbent material and place in clean, empty containers for disposal. Only the spilled material and the absorbant should be placed in this container.

SECTION 7 - HANDLING AND STORAGE

PRECAUTIONS TO BE TAKEN DURING HANDLING AND STORAGE:

Vapors may collect in low areas. If this material is part of a multiple component system, read the Material Safety Data Sheet(s) for the other component or components before blending as the resulting mixture may have the hazards of all of its parts. Containers should be grounded when pouring. Avoid free fall of liquids in excess of a few inches.

STORAGE:

Do not store above 120 degrees F. (48 degrees C.). Store large quantities in buildings designed and protected for storage of NFPA Class II combustible liquids.

SECTION 8 - EXPOSURE CONTROLS & PERSONAL PROTECTION

ENGINEERING CONTROLS:

Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 8 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

PERSONAL PROTECTIVE EQUIPMENT

EYES:

Wear chemical-type splash goggles when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapors.

SKIN/GLOVES:

Wear protective clothing to prevent skin contact. Apron and gloves should be constructed of: butyl rubber. No specific permeation/degradation testing have been done on protective clothing for this product. Recommendations for skin protection are based on infrequent contact with this product. For frequent contact or total immersion, contact a manufacturer of protective clothing for appropriate chemical impervious equipment. Clean contaminated clothing and shoes.

RESPIRATOR:

Overexposure to vapors may be prevented by ensuring proper ventilation controls, vapor exhaust or fresh air entry. A NIOSH- approved air purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may also reduce exposure. Read the respirator manufacturer's instructions and literature carefully to determine the type of airborne contaminants against which the respirator is effective, its limitations, and how it is to be properly fitted and used. Provide general dilution or local exhaust ventilation in volume and pattern to keep the concentration of ingredients listed in Section 2 below the lowest suggested exposure limits, the LEL below the stated limit, and to remove decomposition products during welding or flame cutting.

GENERAL HYGIENE - ESTABLISHED EXPOSURE LIMITS

If Threshold Limit Values (TLVs) have been established by ACGIH, OSHA, Ontario or PPG, they will be listed below. These limits are intended for use in the practice of industrial hygiene as guidelines or recommendations in the control of potential workplace health hazards. These limits are not a relative index of toxicity and should not be used by anyone without industrial hygiene training.

Material/ CAS Number	Percent	ACGIH TLV	ACGIH STEL	OSHA PEL	OSHA STEL
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	S- 5 ppm	Not established	S- 100 ppm	Not established

Key: OSHA=Occupational Safety and Health Administration;
PEL=Permissible Exposure Limit; Ceiling=PEL Ceiling Limit; STEL=PEL
Short-Term Exposure Limit; Skin=OSHA Skin Designation.

Material/ CAS Number	Percent	Ontario TWA	Ontario STEL	PPG IPEL	PPG STEL
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	S- 5 ppm	Not established	Not established	10 PPM

Key: ACGIH=American Conference of Governmental Industrial
Hygienists; OSHA=Occupational Safety and Health Administration;
TLV=Threshold Limit Value; TWA=Time Weighted Average;
PEL=Permissible Exposure Limit; IPEL=Internal Permissible Exposure
Limit; Ceiling=TLV or PEL Ceiling Limit; STEL=TLV or PEL Short-Term
Exposure Limit; Skin= Skin Absorption Designation. [C- Ceiling Limit; S-
Potential Skin Absorption; R-Respirable Dust]
Additional Information Not applicable.

SECTION 9 - PHYSICAL & CHEMICAL PROPERTIES (FORMULA VALUES, NOT SALES SPECIFICATIONS)

SPECIFIC GRAVITY:	.975
PHYSICAL STATE:	Liquid
Percent Solids:	.00
Percent Volatile by Volume:	100.000
pH:	Not available.
ODOR THRESHOLD:	Not available.
Vapour Pressure:	1.2 mmHg
ODOR/APPEARANCE:	Non-viscous liquid with an odor characteristic of the ingredients listed in Section 2.
VAPOR DENSITY:	HEAVIER THAN AIR
Evaporation Rate:	21
BOILING POINT OR RANGE:	313 - 320Degrees F
Freezing Point or Range:	Not Applicable.
Melting Point or Range(°C):	Not Applicable.
Octanol/Water Partition	Not Applicable.
Coefficient:	
WEIGHT PER GALLON:	8.1 (U.S.) / 9.75 (IMPERIAL)

SECTION 10 - STABILITY AND REACTIVITY

STABILITY:

This product is normally stable and will not undergo hazardous reactions.

CONDITIONS TO AVOID:

None Known.

INCOMPATIBLE MATERIALS:

Avoid contact with strong alkalis, strong mineral acids, or strong oxidizing agents.

HAZARDOUS POLYMERIZATION:

None Known.

HAZARDOUS DECOMPOSITION PRODUCTS:

- Carbon monoxide - Carbon dioxide

Waste material must be disposed of in accordance with federal, state, provincial and local environmental control regulations. Empty containers should be recycled by an appropriately licensed reconditioner/salvager or disposed of through a permitted waste management facility. Additional disposal information is contained on the Environmental Data Sheet for this product, which can be obtained from your PPG representative.

SECTION 14 - TRANSPORTATION INFORMATION

Proper Shipping Name: NOT AVAILABLE
NOS Technical Name: NOT AVAILABLE
Hazard Class: N.A.
Subsidiary Class(es): N.A.
UN Number: N.A.
Packing Group: N.A.

SECTION 11 - TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Material/ CAS Number	Percent	ORAL LD50 (g/kg)	DERMAL LD50 (g/kg)	INHALATION LC50 (mg/l)
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	3.90 g/kg	Not Available	16.23 mg/L, 4 h

CHRONIC TOXICITY**Target Organs:**

- Bone marrow and blood tissues - Blood - Kidney - Liver - Reproductive -
Teratogen - Brain - Central nervous system - Lung

Mutagenicity Toxicity:

This has not been tested for this product.

Reproductive Toxicity:

This has not been tested for this product.

USA - RQ Hazardous Substances: NOT AVAILABLE
USA-RQ Hazardous Substance NOT AVAILABLE
Threshold Ship Weight:
Marine Pollutant Name: NOT AVAILABLE

SECTION 15 - REGULATORY INFORMATION

INVENTORY STATUS

U.S. TSCA: This product and/or all of its components are listed on the U.S. TSCA Inventory or is otherwise exempt from TSCA Inventory reporting requirements.

FEDERAL REGULATIONS**US Regulations**

Material/ CAS Number	Percent	CERCLA HS - RQ (LBS)	SARA EHS- TPQ (LBS)	SARA 313
2- ETHOXYETHYLAC ETATE 111-15-9	60- 100	Not Listed	Not Listed	Not Listed

SUPPLEMENTAL HEALTH INFORMATION:

Material/ CAS Number	Percent	Ingredient Specific Animal Data:
2- ETHOXYET HYLACETA TE 111-15-9	60- 100	This product contains an ethylene series glycol ether and/or acetate which has been shown to cause adverse effects on the kidneys, liver, blood and/or blood-forming tissue.

SECTION 12 - ECOLOGICAL INFORMATION

POTENTIAL ENVIRONMENTAL EFFECTS

Ecotoxicity: No Information Available.

ENVIRONMENTAL FATE

Mobility: No Information Available.

Biodegradation: No Information Available.

Bioaccumulation: No Information Available.

PHYSICAL/CHEMICAL

Hydrolysis: No Information Available.

Photolysis: No Information Available.

SECTION 13 - DISPOSAL CONSIDERATIONS

Provide maximum ventilation, only personnel equipped with proper respiratory and skin and eye protection should be permitted in the area. Take up spilled material with sawdust, vermiculite, or other absorbent material and place in containers for disposal.

SARA 311/312

Health (acute): Yes

Health (chronic): Yes

Fire (flammable): Yes

Pressure: No

Reactivity: No

WHMIS HAZARD CLASS: - Class B, Division 3 - Class D, Division 2, Subdivision A

STATE/PROVINCIAL REGULATIONS

CALIFORNIA PROP. 65: WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Additional Information

Key: IARC- International Agency on the Research of Cancer; ACGIH- American Conference of Governmental Industrial Hygienists; NTP- National Toxicology Program *Denotes chemical as NTP Known Carcinogen; + Denotes NTP Possible Carcinogen; OSHA- Occupational Safety and Health Administration.

SECTION 16 - OTHER INFORMATION

Hazard Rating Systems

NFPA Rating: 2 20

HMIS Rating: 2*20

Rating System: 0=Minimal, 1=Slight, 2=Moderate, 3=Serious, 4=Severe, *Chronic Effects.

PPG Kansai Automotive Finishes (PKAF)
5875 New King Court
Troy, MI 48098

Product ID: CMS611 (0019-F1)
PRODUCT NAME: CELLOSOLVE ACETATE

HMIS=Hazardous Materials Identification System; NFPA=National Fire
Protection Association;

Safe handling of this product requires that all of the information on the
MSDS be evaluated for specific work environments and conditions of use.

PREPARED BY: Product Safety Department
REASON FOR REVISION: Date. Edition.
Updated MSDS
format.

This Material Safety Data Sheet has been prepared in accordance with
Canada's Workplace Hazardous Materials Information System (WHMIS)
and the OSHA Hazard Communication Standard (29 CFR 1910.1200),
the supplier notification requirements of SARA Title III, Section 313 and
other applicable right-to-know regulations.
Additional environmental information is contained on the Environmental
Data Sheet for this product, which can be obtained from your PPG
representative.

CMS611 001001 (00168311.009)(05/31/05)
000315, 001, 0019

*** END OF MSDS ***

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Citric acid**

Product Number : 251275
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : C₆H₈O₇
Molecular Weight : 192.12 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Citric acid			
77-92-9	201-069-1	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview
OSHA Hazards
Irritant

HMIS Classification
Health Hazard: 2
Flammability: 0
Physical hazards: 0

NFPA Rating
Health Hazard: 2
Fire 0
Reactivity Hazard 0

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point no data available

Ignition temperature no data available

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation.

Environmental precautions

Do not let product enter drains.

Methods for cleaning up

Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling

Avoid formation of dust and aerosols.

Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage

Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143) respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	solid
Colour	no data available

Safety data

pH	no data available
Melting point	155 - 157 °C (311 - 315 °F)
Boiling point	no data available
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	8 %(V)
Water solubility	no data available

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Materials to avoid

Oxidizing agents, Bases, Reducing agents, Nitrates

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions.

Carbon oxides

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat - 3,000 mg/kg

Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h

Eyes - rabbit - Severe eye irritation - 24 h

Sensitisation

Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Chronic exposure

no data available

Signs and Symptoms of Exposure

Vomiting, Diarrhoea, Damage to tooth enamel., Dermatitis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish LC50 - Leuciscus idus melanotus - 440 mg/l - 48 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

OSHA Hazards

Irritant

TSCA Status

On TSCA Inventory

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Acute Health Hazard

Massachusetts Right To Know Components

No Components Listed

Pennsylvania Right To Know Components

Citric acid

CAS-No.
77-92-9

Revision Date

New Jersey Right To Know Components

Citric acid

CAS-No.
77-92-9

Revision Date

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION**Further information**

Copyright 2007 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only., The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

MSDS Number: C4092 * * * * Effective Date: 04/02/07 * * * * Supersedes: 08/10/04

**Material Safety Data Sheet**

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865



24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-998-6686

Outside U.S. And Canada
Chemtrec: 703-527-3887

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

CHOLINE CHLORIDE

1. Product Identification

Synonyms: Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, chloride; biocolina; Hepacholine; Lipotril; Choline Chlorhydrate.

CAS No.: 67-48-1

Molecular Weight: 139.63

Chemical Formula: HOCH₂CH₂N(CH₃)₃Cl

Product Codes: 1582

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Choline Chloride	67-48-1	98 - 100%	Yes

3. Hazards Identification

Emergency Overview

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE

IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.**SAF-T-DATA^(tm)** Ratings (Provided here for your convenience)

Health Rating: 1 - Slight

Flammability Rating: 1 - Slight

Reactivity Rating: 0 - None

Contact Rating: 2 - Moderate

Lab Protective Equip: GOGGLES; LAB COAT; PROPER GLOVES

Storage Color Code: Green (General Storage)
-----**Potential Health Effects**

Information on the human health effects from exposure to this substance is limited.

Inhalation:

No information found, but compound should be handled as a potential health hazard.

Ingestion:

No information found, but compound should be handled as a potential health hazard.

Skin Contact:

May cause irritation with redness and pain.

Eye Contact:

May cause irritation, redness and pain.

Chronic Exposure:

No information found.

Aggravation of Pre-existing Conditions:

No information found.

4. First Aid Measures

Inhalation:

Remove to fresh air. Get medical attention for any breathing difficulty.

Ingestion:

Give several glasses of water to drink to dilute. If large amounts were swallowed, get medical advice.

Skin Contact:

Immediately flush skin with plenty of water for at least 15 minutes. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention if irritation develops.

Eye Contact:

Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get medical attention if irritation persists.

5. Fire Fighting Measures

Fire:

As with most organic solids, fire is possible at elevated temperatures or by contact with an ignition source.

Explosion:

Fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard.

Fire Extinguishing Media:

Water spray, dry chemical, alcohol foam, or carbon dioxide.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

6. Accidental Release Measures

Remove all sources of ignition. Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Clean up spills in a manner that does not disperse dust into the air. Use non-sparking tools and equipment. Reduce airborne dust and prevent scattering by moistening with water. Pick up spill for recovery or disposal and place in a closed container.

7. Handling and Storage

Keep in a tightly closed container, stored in a cool, dry, ventilated area. Protect against physical damage. Isolate from incompatible substances. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:

None established.

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures as low as possible. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

Personal Respirators (NIOSH Approved):

For conditions of use where exposure to dust or mist is apparent and engineering controls are not feasible, a particulate respirator (NIOSH type N95 or better filters) may be worn. If oil particles (e.g. lubricants, cutting fluids, glycerine, etc.) are present, use a NIOSH type R

or P filter. For emergencies or instances where the exposure levels are not known, use a full-face positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Wear protective gloves and clean body-covering clothing.

Eye Protection:

Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:

White crystals.

Odor:

Slight amine odor.

Solubility:

Soluble in water.

Specific Gravity:

No information found.

pH:

Aqueous solution is neutral or slightly acid.

% Volatiles by volume @ 21C (70F):

0

Boiling Point:

No information found.

Melting Point:

244 - 247C (471 - 477F)

Vapor Density (Air=1):

No information found.

Vapor Pressure (mm Hg):

No information found.

Evaporation Rate (BuAc=1):

No information found.

10. Stability and Reactivity

Stability:

Stable under ordinary conditions of use and storage.

Hazardous Decomposition Products:

May produce carbon monoxide, carbon dioxide, nitrogen oxides and hydrogen chloride when heated to decomposition.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

Strong oxidizers.

Conditions to Avoid:

Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Oral rat LD50: 3400 mg/kg Investigated as a mutagen.

-----\Cancer Lists\-----			
-----NTP Carcinogen-----			
Ingredient	Known	Anticipated	IARC Category

Choline Chloride (67-48-1)	No	No	None

12. Ecological Information

Environmental Fate:

No information found.

Environmental Toxicity:

No information found.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste disposal facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Not regulated.

15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia

Choline Chloride (67-48-1)	Yes	Yes	Yes	Yes

-----\Chemical Inventory Status - Part 2\-----

Ingredient	Korea	--Canada--		
		DSL	NDSL	Phil.
Choline Chloride (67-48-1)	Yes	Yes	No	Yes

-----\Federal, State & International Regulations - Part 1\-----

Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
Choline Chloride (67-48-1)	No	No	No	No

-----\Federal, State & International Regulations - Part 2\-----

Ingredient	CERCLA	-RCRA-		-TSCA-
		261.33		8(d)
Choline Chloride (67-48-1)	No	No		No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
 SARA 311/312: Acute: Yes Chronic: No Fire: No Pressure: No
 Reactivity: No (Pure / Solid)

Australian Hazchem Code: None allocated.

Poison Schedule: None allocated.

WHMIS:

This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: 1 Flammability: 1 Reactivity: 0

Label Hazard Warning:

CAUTION! MAY BE HARMFUL IF SWALLOWED OR INHALED. MAY CAUSE IRRITATION TO SKIN, EYES, AND RESPIRATORY TRACT.

Label Precautions:

Avoid breathing dust.

Avoid contact with eyes, skin and clothing.

Keep container closed.

Use with adequate ventilation.

Wash thoroughly after handling.

Label First Aid:

If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If inhaled, remove to fresh air. Get medical attention for any breathing difficulty. Get medical attention if irritation develops or persists.

Product Use:

Laboratory Reagent.

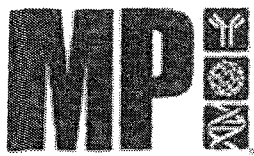
Revision Information:

MSDS Section(s) changed since last revision of document include: 3.

Disclaimer:

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Prepared by: Environmental Health & Safety
Phone Number: (314) 654-1600 (U.S.A.)



Material Safety Data Sheet

Catalog Number: 204269
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 204269

Product name: CETYL ALCOHOL

Synonyms: 1-Hexadecanol; Adol; Alcohol C-16; Hexadecyl Alcohol; Palmityl Alcohol

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
CETYL ALCOHOL	36653-82-4	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause skin irritation and/or dermatitis

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard MAY CAUSE ALLERGIC SKIN REACTION.

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

Catalog Number: 204269

Product name: CETYL ALCOHOL

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EPAHO011000348

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:	Use dry chemical, CO2, water spray or "alcohol" foam
Specific hazards:	Flammable
Unusual hazards:	None known
Special protective equipment for firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear
Specific methods:	Water mist may be used to cool closed containers.
Flash point:	Not determined
Autoignition temperature:	Not determined
NFPA rating:	
NFPA Health:	0
NFPA Flammability:	0
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Use personal protective equipment.
Environmental precautions:	Prevent product from entering drains.
Methods for cleaning up:	Sweep up and shovel into suitable containers for disposal.

7. HANDLING AND STORAGE

Storage:
ROOM TEMPERATURE

Handling:	Use only in area provided with appropriate exhaust ventilation.
Safe handling advice:	Wear personal protective equipment.
Incompatible products:	Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: Breathing apparatus only if aerosol or dust is formed.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Usual safety precautions while handling the product will provide adequate protection against this potential effect.

Eye protection: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

Physical state:	Solid
Formula:	C16H34O
Melting point/range:	54-56°C
Boiling point/range:	179-181°C at 10 mm
Density:	No data available
Vapor pressure:	3.06 x 10 ⁻⁶ mm Hg at 30 °C
Evaporation rate:	No data available
Vapor density:	No data available

Catalog Number: 204269

Product name: CETYL ALCOHOL

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Solubility (in water):

Insoluble

Flash point:

Not determined

Autoignition temperature:

Not determined

10. STABILITY AND REACTIVITY

Stability:

Stable under recommended storage conditions.

Polymerization:

None under normal processing.

Hazardous decomposition products:

Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.

Materials to avoid:

Strong oxidising agents

Strong acids

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information**Acute toxicity****Components**

CETYL ALCOHOL

RTECS Number:

MM0225000

Selected LD50s and LC50s

Oral LD50 Rat : 5 gm/kg

Oral LD50 Mouse : 3200 mg/kg

Dermal LD50 Rabbit : >2600 mg/kg

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

Primary irritation:

No data is available on the product itself.

Carcinogenic effects:

No data is available on the product itself.

Mutagenic effects:

No data is available on the product itself.

Reproductive toxicity:

No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:

No data available

Bioaccumulation:

No data available

Ecotoxicity effects:

No data available

Aquatic toxicity:

May cause long-term adverse effects in the aquatic environment.

Components

CETYL ALCOHOL

**U.S. DOT - Appendix B -
Marine Pollutant**

Not Listed

**U.S. DOT - Appendix B -
Severe Marine Pollutants**

Not Listed

**United Kingdom - The Red
List:**

Not Listed

Components

CETYL ALCOHOL

Germany VCI (WGK)

Not Listed

**World Health Organization
(WHO) - Drinking Water**

Not Listed

**Ecotoxicity - Fish Species
Data**

Not Listed

Components

CETYL ALCOHOL

**Ecotoxicity - Freshwater
Algae Data**

Not Listed

Ecotoxicity - Microtox Data

Not Listed

**Ecotoxicity - Water Flea
Data**

Not Listed

Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
CETYL ALCOHOL	Not Listed	indicator 4; Fully and ICCA sponsored	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
CETYL ALCOHOL	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging:

Do not re-use empty containers

14. TRANSPORT INFORMATION**UN/Id No:**

Not regulated

DOT:**Proper shipping name:**

Not Regulated

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
CETYL ALCOHOL	Not Listed

TDG (Canada):**WHMIS hazard class:**

Non-controlled

IMDG/IMO**IMDG - Hazard Classifications**

Not Applicable

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants
CETYL ALCOHOL	Not Listed	Not Listed

IMO-labels:**15. REGULATORY INFORMATION****International Inventories**

Components
CETYL ALCOHOL
Inventory - United States TSCA - Sect. 8(b)
Canada DSL Inventory List -
Australia (AICS):

Present
Present
Present

Catalog Number: 204269

Product name: CETYL ALCOHOL

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Inventory - China:
EU EINECS List -
Inventory - Japan:
Korean KECL:
Philippines PICCS:

Present
 253-149-0; C16H34O
 2-217; 2-3704
 KE-18460
 Present

U.S. regulations:
Components

CETYL ALCOHOL

California Proposition 65	Massachusetts Right to Know List:	New Jersey Right to Know List:	Pennsylvania Right to Know List:
Not Listed	Not Listed	Not Listed	Not Listed

Components

CETYL ALCOHOL

Florida substance List:	Rhode Island Right to Know List:	Illinois - Toxic Air Contaminants	Connecticut - Hazardous Air Pollutants
Not Listed	Not Listed	Not Listed	Not Listed

Components

CETYL ALCOHOL

SARA 313 Emission reporting/Toxic Release of Chemicals	CERCLA/SARA - Section 302 Extremely Haz	NTP:	IARC:
Not Listed	Not Listed	None	None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

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End of Safety Data Sheet

MATERIAL SAFETY DATA SHEET



Bayer MaterialScience

Bayer MaterialScience LLC
Product Safety & Regulatory Affairs
100 Bayer Road
Pittsburgh, PA 15205-9741
USA

TRANSPORTATION EMERGENCY

CALL CHEMTREC: (800) 424-9300
INTERNATIONAL: (703) 527-3887

NON-TRANSPORTATION

Bayer Emergency Phone: (412) 923-1800
Bayer Information Phone: (800) 662-2927

1. Product and Company Identification

Product Name: CARADOL SC 56-20
Material Number: 3606612
Chemical Family: Polyether Polyol
Chemical Name: Poly (Oxyalkylene) Polymer

2. Hazards Identification

Emergency Overview

Color: Clear **Form:** liquid viscous **Odor:** Mild.
Product poses little or no hazard if spilled. Use cold water spray to cool fire-exposed containers to minimize the risk of rupture. Irritating gases/fumes may be given off during burning or thermal decomposition.

Potential Health Effects

Primary Routes of Entry: Skin Contact, Eye Contact

Medical Conditions Aggravated by Exposure: None known.

HUMAN EFFECTS AND SYMPTOMS OF OVEREXPOSURE

General Effects of Exposure

Acute Effects of Exposure

For Product: CARADOL SC 56-20

Not expected to cause any adverse acute health effects.

Chronic Effects of Exposure

For Product: CARADOL SC 56-20

Not expected to cause any adverse chronic health effects.

Carcinogenicity:

No Carcinogenic substances as defined by IARC, NTP and/or OSHA

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 1 of 6 Report Version: 1.8

EPAHO011000353

3. Composition/Information on Ingredients

Hazardous Components

This material is not hazardous under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200.

4. First Aid Measures

Eye Contact

In case of contact, flush eyes with plenty of lukewarm water. Get medical attention if irritation develops.

Skin Contact

In case of skin contact, wash affected areas with soap and water. Thoroughly clean shoes before reuse. Wash clothing before reuse. Get medical attention if irritation develops and persists.

Inhalation

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. Get medical attention if irritation develops.

Ingestion

If ingested, do not induce vomiting unless directed to do so by medical personnel. Get medical attention.

5. Fire-Fighting Measures

Suitable Extinguishing Media: carbon dioxide (CO₂), dry chemical, foam, water spray for large fires.

Special Fire Fighting Procedures

Firefighters should be equipped with self-contained breathing apparatus to protect against potentially toxic and irritating fumes. Use cold water spray to cool fire-exposed containers to minimize risk of rupture. Toxic and irritating gases/fumes may be given off during burning or thermal decomposition.

6. Accidental release measures

Spill and Leak Procedures

Dike or dam spilled material and control further spillage, if possible. Cover spill with inert material (e. g., dry sand or earth) and collect for proper disposal. Collect and place in appropriately marked sealable containers for disposal. Wash spill area with soap and water.

7. Handling and Storage

Storage Temperature:

minimum: 20 °C (68 °F)
maximum: 60 °C (140 °F)

Material Name: CARADOL SC 56-20

Article Number: 3606612

Storage Period
36 Months

Handling/Storage Precautions

Handle in accordance with good industrial hygiene and safety practices. Wash thoroughly after handling. Keep container closed when not in use. Material is hygroscopic and may absorb small amounts of atmospheric moisture. If contamination with isocyanates is suspected, do not reseal containers. Avoid inhalation of vapour or mist.

8. Exposure Controls / Personal Protection

Country specific exposure limits have not been established or are not applicable

Industrial Hygiene/Ventilation Measures

Under normal conditions of use, special ventilation is not required.

Respiratory Protection

None required under normal conditions of use., NIOSH approved air-supplied respirator during die cleaning, high temperature processing or when thermal decomposition is suspected.

Hand Protection

Permeation resistant gloves., Butyl rubber gloves., Nitrile rubber gloves., Neoprene gloves

Eye Protection

safety glasses with side-shields.

Skin and body protection

No special skin protection requirements during normal handling and use.

Additional Protective Measures

Employees should wash their hands and face before eating, drinking, or using tobacco products. Educate and train employees in the safe use and handling of this product.

9. Physical and chemical properties

Form:	liquid
Appearance:	viscous
Color:	Clear
Odor:	Mild
pH:	Approximately 7
Freezing Point:	< -8.89 °C (< 16 °F)
Boiling Point/Range:	No Data Available
Flash Point:	> 93.33 °C (> 200 °F)
Vapor Pressure:	< 0.001 mmHg @ 25 °C (77 °F)
Specific Gravity:	Approximately 1.01 - 1.05
Solubility in Water:	Slightly Soluble
Viscosity, Dynamic:	Approximately 540 - 1,233 cP @ 20 °C (68 °F)
Bulk Density:	8.428 - 8.762 lb/gal
Molecular Weight:	2,000
Hygroscopicity:	hygroscopic

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 3 of 6 Report Version: 1.8

10. Stability and Reactivity

Hazardous Reactions

Hazardous polymerization does not occur.

Stability

Stable

Materials to avoid

oxidizing agents, Isocyanates

Hazardous decomposition products

By Fire and Thermal Decomposition: Carbon dioxide (CO₂), carbon monoxide (CO), oxides of nitrogen (NO_x), dense black smoke, Other undetermined compounds

11. Toxicological Information

No information available.

12. Ecological Information

No information available.

13. Disposal considerations

Waste Disposal Method

Waste disposal should be in accordance with existing federal, state and local environmental control laws.

Empty Container Precautions

Recondition or dispose of empty container in accordance with governmental regulations. Empty containers retain product residue; observe all precautions for product. Do not heat or cut container with electric or gas torch.

14. Transportation information

Land transport (DOT)

Non-Regulated

Sea transport (IMDG)

Non-Regulated

Air transport (ICAO/IATA)

Non-Regulated

15. Regulatory Information

United States Federal Regulations

Material Name: CARADOL SC 56-20

Article Number: 3606612

OSHA Hazcom Standard Rating: Non-Hazardous

US. Toxic Substances Control Act: Listed on the TSCA Inventory.

US. EPA CERCLA Hazardous Substances (40 CFR 302):

Components

None

SARA Section 311/312 Hazard Categories:

Non-hazardous under Section 311/312

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III
Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A):**

Components

None

**US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III
Section 313 Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required:**

Components

None

**US. EPA Resource Conservation and Recovery Act (RCRA) Composite List of Hazardous Wastes
and Appendix VIII Hazardous Constituents (40 CFR 261):**

If discarded in its purchased form, this product would not be a hazardous waste either by listing or by characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste. (40 CFR 261.20-24)

State Right-To-Know Information

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

Massachusetts, New Jersey or Pennsylvania Right to Know Substance Lists:

Weight %

99 - 100%

Components

Polyether Polyol

CAS-No.

9082-00-2

California Prop. 65:

To the best of our knowledge, this product does not contain any of the listed chemicals, which the state of California has found to cause cancer, birth defects or other reproductive harm.

16. Other Information

NFPA 704M Rating

Health	0
Flammability	1
Reactivity	0
Other	

0=Insignificant 1=Slight 2=Moderate 3=High 4=Extreme

HMIS Rating

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 5 of 6 Report Version: 1.8

Health	0
Flammability	1
Physical Hazard	0

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe

* = Chronic Health Hazard

The method of hazard communication for Bayer MaterialScience LLC is comprised of Product Labels and Material Safety Data Sheets. HMIS and NFPA ratings are provided by Bayer MaterialScience LLC as a customer service.

Contact Person: Product Safety Department
 Telephone: (412) 777-2835
 MSDS Number: R302460
 Version Date: 02/10/2007
 Report Version: 1.8

This information is furnished without warranty, express or implied. This information is believed to be accurate to the best knowledge of Bayer MaterialScience LLC. The information in this MSDS relates only to the specific material designated herein. Bayer MaterialScience LLC assumes no legal responsibility for use of or reliance upon the information in this MSDS.

Material Name: CARADOL SC 56-20

Article Number: 3606612

Page: 6 of 6 Report Version: 1.8

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/26/2007

1 Identification of substance:**Product details:****Product name:** Calcium stearate**Stock number:** 39423**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department**Emergency information:**

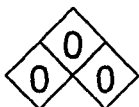
During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description:** (CAS#)

calcium stearate (CAS# 1592-23-0); 100%

Identification number(s):**EINECS Number:** 216-472-8**3 Hazards identification****Hazard description:** Not applicable**Information pertaining to particular dangers for man and environment**

Not applicable

Classification system**NEPA Ratings (scale 0-4)**

Health = 0

Fire = 0

Reactivity = 0

HMIS ratings (scale 0-4)**(Hazardous Materials Identification System)**

HEALTH	1
FIRE	1
REACTIVITY	1

Health (acute effects) = 1

Flammability = 1

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

USA

SUNCOAST CHEMICALS, INC

MATERIAL SAFETY DATA SHEET

CAPTOBAN 3X OIL BASE
(Triple Strength Concentrate)

(b) (4)



Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

1 Identification of substance:

Product details:

Product name: Calcium hydroxide**Stock number:** 14662

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company
Johnson Matthey Catalog Company, Inc.
30 Bond Street
Ward Hill, MA 01835-8099
Emergency Phone: (978) 521-6300
CHEMTREC: (800) 424-9300
Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.
After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Calcium hydroxide (CAS# 1305-62-0): 100%

Identification number(s):

EINECS Number: 215-137-3

3 Hazards identification

Hazard description:



C Corrosive

Information pertaining to particular dangers for man and environment

R 34 Causes burns.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

4 First aid measures

General information

Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 1)

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**CO₂, sand, extinguishing powder. Do not use water.**For safety reasons unsuitable extinguishing agents** Water**Special hazards caused by the material, its products of combustion or resulting gases:**

In case of fire, the following can be released:

Metal oxide fume

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Do not store together with acids.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

USA

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 2)

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Calcium hydroxide

	mg/m ³
ACGIH TLV	5
Austria MAK	5
Belgium TWA	5
Denmark TWA	5
Finland TWA	5
France VME	5
Korea TLV	5
Norway TWA	5
Poland TWA	2
Switzerland MAK-W	5
United Kingdom	5-LTEL
USA PEL	5 (respirable fraction) 15 (total dust)

Additional information: No data

Personal protective equipment

General protective and hygienic measures

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection:

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.

9 Physical and chemical properties:

General Information

Form:	Powder
Color:	White
Odor:	Odorless

Change in condition

Melting point/Melting range:	580°C (1076°F)
Boiling point/Boiling range:	Not determined

(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 3)

Sublimation temperature / start: Not determined	
Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	2.24 g/cm ³

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Acids

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Metal oxide fume

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	7300 mg/kg (mus)
		7340 mg/kg (rat)
Irritation of eyes	severe	10 mg (rbt)

Primary irritant effect:

on the skin:

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus.

May cause skin burns or irritation depending on the severity of the exposure.

(Contd. on page 5)

USA

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 4)

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class: 8

Identification number: UN3262

Packing group: III

Proper shipping name (technical name): CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (calcium hydroxide)

Label 8

Land transport ADR/RID (cross-border)



ADR/RID class: 8 (C6) Corrosive substances

Danger code (Kemler): 80

UN-Number: 3262

Packaging group: III

Description of goods: 3262 CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (calcium hydroxide)

(Contd. on page 6)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 5)

Maritime transport IMDG:



IMDG Class:	8
UN Number:	3262
Label	8
Packaging group:	III
Proper shipping name:	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (calcium hydroxide)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class:	8
UN/ID Number:	3262
Label	8
Packaging group:	III
Proper shipping name:	CORROSIVE SOLID, BASIC, INORGANIC, N.O.S. (calcium hydroxide)

15 Regulations

Product related hazard informations:

Hazard symbols:

C Corrosive

Risk phrases:

34 Causes burns.

Safety phrases:

- 20 When using do not eat or drink.
- 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
- 36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
- 45 In case of accident or if you feel unwell, seek medical advice immediately.
- 60 This material and its container must be disposed of as hazardous waste.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

USA

(Contd. on page 7)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Calcium hydroxide

(Contd. of page 6)

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders

USA

Material Safety Data Sheet

Calcium chloride

ACC# 03900

Section 1 - Chemical Product and Company Identification

MSDS Name: Calcium chloride

Catalog Numbers: AC219170000, AC219170010, AC219170025, AC219170250, AC219175000, AC297150000, AC297150250, AC297155000, AC300380000, AC300380010, AC300380025, AC300382500, AC349610000, AC349610250, AC349615000, S71923, S71924, S73000, S73046, S799422, S93162, C614-10, C614-3, C614-500, C77-212, C77-500, NC9297837, NC9830185

Synonyms: Calpus; Caltac; Dowflake; Liquidow; Peladow; Snowmelt; Superflake anhydrous.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
10043-52-4	Calcium chloride	>96	233-140-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white solid.

Warning! May be harmful if swallowed. May cause severe respiratory and digestive tract irritation with possible burns. May cause severe eye and skin irritation with possible burns. May cause cardiac disturbances. Hygroscopic (absorbs moisture from the air).

Target Organs: Eyes.

Potential Health Effects

Eye: Contact with eyes may cause severe irritation, and possible eye burns.

Skin: Contact with skin causes irritation and possible burns, especially if the skin is wet or moist.

Ingestion: May cause severe gastrointestinal tract irritation with nausea, vomiting and possible burns. May cause cardiac disturbances. May be harmful if swallowed. In very severe cases, seizures, rapid respiration, slow heartbeat, or death, may

Inhalation: May cause severe irritation of the upper respiratory tract with pain, burns, and inflammation.

Chronic: Effects may be delayed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid.

Inhalation: Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid. Do NOT use mouth-to-mouth resuscitation.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire.

Flash Point: Not applicable.

Autoignition Temperature: Not applicable.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Clean up spills immediately, observing precautions in the Protective Equipment section.

Avoid generating dusty conditions. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Keep container tightly closed. Do not get on skin or in eyes. Do not ingest or inhale. Wash clothing before reuse. Always use cool water when dissolving calcium chloride. Heat evolved is significant.

Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Store protected from moisture.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcium chloride	none listed	none listed	none listed

OSHA Vacated PELs: Calcium chloride: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear impervious gloves.

Clothing: Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State: Solid

Appearance: white

Odor: odorless

pH: Not available.

Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 1600 deg C @ 760 mmHg
Freezing/Melting Point: 782 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density: 2.1500 g/cm³
Molecular Formula: CaCl₂
Molecular Weight: 110.99

Section 10 - Stability and Reactivity

Chemical Stability: Stable.

Conditions to Avoid: Dust generation, excess heat, exposure to moist air or water.

Incompatibilities with Other Materials: Bromine trifluoride, Furan-2-peroxycarboxylic acid, Solutions attack some metals..

Hazardous Decomposition Products: Hydrogen chloride, calcium oxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 10043-52-4: EV9800000

LD50/LC50:

CAS# 10043-52-4:

Oral, mouse: LD50 = 1940 mg/kg;

Oral, rabbit: LD50 = 1384 mg/kg;

Oral, rat: LD50 = 1 gm/kg;

Carcinogenicity:

CAS# 10043-52-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information found

Teratogenicity: No information found

Reproductive Effects: No information found

Mutagenicity: Mutagenic effects have occurred in experimental animals.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	Not Regulated	Not Regulated
Hazard Class:		
UN Number:		
Packing Group:		

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 10043-52-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

RA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 10043-52-4: immediate, delayed, reactive.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 10043-52-4 is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

XI

Risk Phrases:

R 36 Irritating to eyes.

Safety Phrases:

S 22 Do not breathe dust.

S 24 Avoid contact with skin.

WGK (Water Danger/Protection)

CAS# 10043-52-4: 0

Canada - DSL/NDSL

CAS# 10043-52-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

Section 16 - Additional Information

MSDS Creation Date: 12/12/1997

Revision #7 Date: 6/06/2006

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 1)

After swallowing Seek medical treatment.

5 Fire fighting measures

Suitable extinguishing agents

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting: Pick up mechanically.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling

Information for safe handling:

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

No special precautions are necessary if used correctly.

Information about protection against explosions and fires:

No special measures required.

Storage

Requirements to be met by storerooms and receptacles:

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection

Additional information about design of technical systems:

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Stearates

	mg/m ³
ACGIH TLV	10
Ireland TWA	10
Netherlands TWA	10

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 2)

Additional information: No data

Personal protective equipment**General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Powder
Color:	White
Odor:	Odorless

Change in condition

Melting point/Melting range: 179-180°C (354-356°F)

Boiling point/Boiling range: Not determined

Sublimation temperature / start: Not determined

Flash point: Not applicable

Flammability (solid, gaseous) Product is not flammable.

Ignition temperature: Not determined

Decomposition temperature: Not determined

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:

Lower: Not determined

Upper: Not determined

Vapor pressure: Not determined

Density: Not determined

Solubility in / Miscibility with

Water: Insoluble

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions Reacts with oxidizing agents

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

USA

(Contd. on page 4)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 3)

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	>10000 mg/kg (mus)
		>10000 mg/kg (rat)
Inhalative	LC50/4H	>1241 mg/m3/4H (mam)

Primary irritant effect:

on the skin: May cause irritation

on the eye: Powder: irritant effect

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

The toxicity of calcium compounds is generally due to the anion.

Toxicity, as indicated by the LC50 and LD50 data is low. Product may have irritating effects at lower exposure levels.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information:

General notes:

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations

Product:

Recommendation

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

Not a hazardous material for transportation.

DOT regulations:

Hazard class: None

Land transport ADR/RID (cross-border)

ADR/RID class: None

Maritime transport IMDG:

IMDG Class: None

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: None

Transport/Additional information:

Not dangerous according to the above specifications.

USA

(Contd. on page 5)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 01/26/2007

Product name: Calcium stearate

(Contd. of page 4)

15 Regulations**Product related hazard informations:**

Observe the general safety regulations when handling chemicals

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.**Contact:** Darrell R. Sanders

USA

HALLIBURTON

MATERIAL SAFETY DATA SHEET

Product Trade Name: **CALCIUM BROMIDE**

Revision Date: 02-Jan-2007

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product Trade Name: CALCIUM BROMIDE

Synonyms: None

Chemical Family: Inorganic Salt

Application: Additive

Manufacturer/Supplier: Baroid Drilling Fluids
a Product Service Line of Halliburton Energy Services, Inc.
P.O. Box 1675
Houston, TX 77251
Telephone: (281) 871-4000
Emergency Telephone: (281) 575-5000

Prepared By: Chemical Compliance
Telephone: 1-580-251-4335

2. COMPOSITION/INFORMATION ON INGREDIENTS

SUBSTANCE	CAS Number	PERCENT	ACGIH TLV-TWA	OSHA PEL-TWA
Calcium bromide	7789-41-5	60 - 100%	Not applicable	Not applicable

3. HAZARDS IDENTIFICATION

Hazard Overview: May cause eye, skin, and respiratory irritation.

4. FIRST AID MEASURES

Inhalation If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Skin Wash with soap and water. Get medical attention if irritation persists. Remove contaminated clothing and launder before reuse.

Eyes In case of contact, or suspected contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention immediately after flushing.

Ingestion Do not induce vomiting. Slowly dilute with 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

Notes to Physician Not Applicable

5. FIRE FIGHTING MEASURES

Flash Point/Range (F):	Not Determined
Flash Point/Range (C):	Not Determined
Flash Point Method:	Not Determined
Autoignition Temperature (F):	Not Determined
Autoignition Temperature (C):	Not Determined
Flammability Limits in Air - Lower (%):	Not Determined
Flammability Limits in Air - Upper (%):	Not Determined

Fire Extinguishing Media	Water fog, carbon dioxide, foam, dry chemical.
Special Exposure Hazards	Decomposition in fire may produce toxic gases.
Special Protective Equipment for Fire-Fighters	Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.
NFPA Ratings:	Health 1, Flammability 0, Reactivity 0
HMIS Ratings:	Flammability 0, Reactivity 0, Health 1

6. ACCIDENTAL RELEASE MEASURES

Personal Precautionary Measures Use appropriate protective equipment. Avoid creating and breathing dust.

Environmental Precautionary Measures None known.

Procedure for Cleaning / Absorption Scoop up and remove.

7. HANDLING AND STORAGE

Handling Precautions Avoid contact with eyes, skin, or clothing. Avoid creating or inhaling dust. Wash hands after use.

Storage Information Store in a cool, dry location.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering Controls A well ventilated area to control dust levels.

Respiratory Protection Dust/mist respirator. (95%)

Hand Protection Impervious rubber gloves.

Skin Protection Normal work coveralls.

Eye Protection Wear safety glasses or goggles to protect against exposure.

Other Precautions Eyewash fountains and safety showers must be easily accessible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Color:	White
Odor:	Odorless
pH:	Not Determined
Specific Gravity @ 20 C (Water=1):	3.35
Density @ 20 C (lbs./gallon):	Not Determined
Bulk Density @ 20 C (lbs/ft3):	Not Determined

CALCIUM BROMIDE
Page 2 of 5

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point/Range (F):	1490
Boiling Point/Range (C):	810
Freezing Point/Range (F):	Not Determined
Freezing Point/Range (C):	Not Determined
Vapor Pressure @ 20 C (mmHg):	Not Determined
Vapor Density (Air=1):	Not Determined
Percent Volatiles:	0
Evaporation Rate (Butyl Acetate=1):	Not Determined
Solubility in Water (g/100ml):	15
Solubility in Solvents (g/100ml):	Not Determined
VOCs (lbs./gallon):	Not Determined
Viscosity, Dynamic @ 20 C (centipoise):	Not Determined
Viscosity, Kinematic @ 20 C (centistokes):	Not Determined
Partition Coefficient/n-Octanol/Water:	Not Determined
Molecular Weight (g/mole):	Not Determined

10. STABILITY AND REACTIVITY

Stability Data:	Stable
Hazardous Polymerization:	Will Not Occur
Conditions to Avoid	None known.
Incompatibility (Materials to Avoid)	Contact with water. Potassium.
Hazardous Decomposition Products	Hydrogen bromide.
Additional Guidelines	Not Applicable

11. TOXICOLOGICAL INFORMATION

Principle Route of Exposure	Eye or skin contact, inhalation.
Inhalation	May cause respiratory irritation.
Skin Contact	May cause skin irritation.
Eye Contact	May cause severe eye irritation.
Ingestion	Irritation of the mouth, throat, and stomach. May cause abdominal pain, vomiting, nausea, and diarrhea.
Aggravated Medical Conditions	Skin disorders.
Chronic Effects/Carcinogenicity	Repeated excessive ingestion may cause central nervous system effects.
Other Information	None known.
Toxicity Tests	
Oral Toxicity:	LD50: 4000 mg/kg (Rat)
Dermal Toxicity:	Not determined
Inhalation Toxicity:	Not determined
Primary Irritation Effect:	Not determined

Carcinogenicity	Not determined
Genotoxicity:	Not determined
Reproductive / Developmental Toxicity:	Ames Test: Negative

12. ECOLOGICAL INFORMATION

Mobility (Water/Soil/Air)	Not determined
Persistence/Degradability	Not determined
Bio-accumulation	Not Determined

Ecotoxicological Information

Acute Fish Toxicity:	Not determined
Acute Crustaceans Toxicity:	Not determined
Acute Algae Toxicity:	Not determined

Chemical Fate Information	Not determined
Other Information	Not applicable

13. DISPOSAL CONSIDERATIONS

Disposal Method	Disposal should be made in accordance with federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. TRANSPORT INFORMATION

Land Transportation

DOT
Not restricted

Canadian TDG
Not restricted

ADR Not restricted

Air Transportation

ICAO/IATA Not restricted

Sea Transportation

IMDG Not restricted

Other Shipping Information

Labels:	None
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15. REGULATORY INFORMATION

15. REGULATORY INFORMATION

US Regulations

US TSCA Inventory	All components listed on inventory.
EPA SARA Title III Extremely Hazardous Substances	Not applicable
EPA SARA (311,312) Hazard Class	Acute Health Hazard
EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
EPA CERCLA/Superfund Reportable Spill Quantity For This Product	Not applicable.
EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
California Proposition 65	All components listed do not apply to the California Proposition 65 Regulation.
MA Right-to-Know Law	Does not apply.
NJ Right-to-Know Law	Does not apply.
PA Right-to-Know Law	Does not apply.

Canadian Regulations

Canadian DSL Inventory	All components listed on inventory.
WHMIS Hazard Class	D2B Toxic Materials

16. OTHER INFORMATION

The following sections have been revised since the last issue of this MSDS

Not applicable

Additional Information	For additional information on the use of this product, contact your local Halliburton representative. For questions about the Material Safety Data Sheet for this or other Halliburton products, contact Chemical Compliance at 1-580-251-4335.
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Disclaimer Statement	This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.
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END OF MSDS

Tideport

1049

MSDS 242-7

TEXAS AROMATICS, LP
MATERIAL SAFETY DATA SHEET
C12 DISTILLATE BLENDSTOCK
SEPTEMBER 14, 2007

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: C12 DISTILLATE BLENDSTOCK

CHEMICAL NAME:

Alkenes, C11-13, C12 Rich

CAS# 68526-58-9

CHEMICAL FAMILY:

Higher Olefins, Dodecene. Petroleum hydrocarbon

PRODUCT DESCRIPTION:

Liquid with characteristic odor containing
predominantly C12 olefin isomers.

Emergency Phone Number:

Texas Aromatics, LP
3555 Timmons Lane, Suite 700
Houston, TX 77027

CHEMTREC (800) 424-9300

(713)520-2900

SECTION 2 COMPOSITION/INFORMATION ON INGREDIENTS

The composition of this mixture may be proprietary information. In the event of a medical emergency, compositional information will be provided to a physician or nurse.

This product is hazardous as defined in 29 CFR1910.1200, based on the following compositional information:

OSHA HAZARD	COMPONENT
Combustible	

SECTION 3 HAZARDS IDENTIFICATION

POTENTIAL HEALTH EFFECTS

EYE CONTACT:

Slightly irritating but does not injure eye tissue.

SKIN CONTACT:

Occasional brief contact with the liquid will not result in significant irritation unless evaporation is impeded.
Frequent or prolonged contact may irritate.
Low order of toxicity.

INHALATION:

Low order of toxicity.
Vapor concentrations above recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects.

INGESTION:

Small amounts of the liquid aspirated into the respiratory system during ingestion, or from vomiting, may cause bronchiopneumonia or pulmonary edema.
Minimal toxicity.

SECTION 4 FIRST AID MEASURES**EYE CONTACT:**

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water; use soap if available.

INHALATION:

Using proper respiratory protection, immediately remove the affected victim from exposure. Administer artificial respiration if breathing is stopped. Keep at rest. Call for prompt medical attention.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention.

SECTION 5 FIRE-FIGHTING MEASURES

FLASH POINT: 39 Deg C. **METHOD:** ASTM D-93, PMCC, Procedure A
FLAMMABLE LIMITS: NOTE: Not Available
AUTOIGNITION TEMP.: NOTE: Not Available

GENERAL HAZARD

Combustible Liquid, can form combustible mixtures at temperatures at or above the flashpoint.
Static Discharge, material can accumulate static charges which can cause an incendiary electrical discharge.
"Empty" containers retain product residue (liquid and/or vapor) and can be dangerous. DO NOT pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.
Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner, or properly disposed of.

FIRE FIGHTING

Use water spray to cool fire exposed surfaces and to protect personnel. Isolate "fuel" supply from fire.
Use foam, dry chemical, or water spray to extinguish fire.
Avoid spraying water directly into storage containers due to danger of boilover.

DECOMPOSITION PRODUCTS UNDER FIRE CONDITIONS

No unusual

SECTION 6 ACCIDENTAL RELEASE MEASURES

LAND SPILL

Eliminate sources of ignition. Prevent additional discharge of material, if possible to do so without hazard. For small spills implement cleanup procedures; for large spills implement cleanup procedures and, if in public area, keep public away and advise authorities. Also, if this product is subject to CERCLA reporting (see Section 15 REGULATORY INFORMATION) notify the National Response Center.
Prevent liquid from entering sewers, watercourses, or low areas. Contain spilled liquid with sand or earth. Do not use combustible materials such as sawdust.

Recover by pumping (use an explosion proof or hand pump) or with a suitable absorbent.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

WATER SPILL

Eliminate sources of ignition. Warn occupants and shipping in surrounding and downwind areas of fire and explosion hazard and request all to stay clear.

Remove from surface with suitable adsorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in non-confined waters.

Consult an expert on disposal of recovered material and ensure conformity to local disposal regulations.

SECTION 7 STORAGE AND HANDLING

ELECTROSTATIC ACCUMULATION HAZARD

Yes, use proper bonding and/or grounding procedure.

Additional information regarding safe handling of products with static accumulation potential can be ordered by contacting the American Petroleum Institute (API) for API Recommended Practice 2003, entitled "Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents" (American Petroleum Institute, 1220 L Street Northwest, Washington, DC 20005), or the National Fire Protection Association (NFPA) for NFPA 77 entitled "Static Electricity" (National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101).

STORAGE TEMPERATURE Deg F:

Ambient

LOADING/UNLOADING TEMPERATURE Deg F:

Ambient

STORAGE/TRANSPORT PRESSURE mmHg:

Atmospheric

LOADING/UNLOADING VISCOSITY cSt:

1.9

STORAGE AND HANDLING:

Keep container closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials.

Do NOT handle or store near an open flame, heat or other sources of ignition. Protect material from direct sunlight.

Material will accumulate static charges which may cause an electrical spark (ignition source). Use proper bonding and/or grounding procedures.

Do NOT pressurize, cut, heat, or weld containers. Empty product containers may contain product residue. Do NOT reuse empty containers without commercial cleaning or reconditioning.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE CONTROLS

The use of mechanical dilution ventilation is recommended whenever this product is used in a confined space, is heated above ambient temperatures, or is agitated.

PERSONAL PROTECTION

For open systems where contact is likely, wear safety glasses with side shields, long sleeves, and chemical resistant gloves.

Where contact may occur, wear safety glasses with side shields.

Where concentrations in air may exceed the limits given in this Section and engineering, work practice or other means of exposure reduction are not adequate, NIOSH approved respirators may be necessary to prevent overexposure by inhalation.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY at Deg F:	0.77 at 68
VAPOR PRESSURE, mmHg at Deg F:	< 51.68 at 100
SOLUBILITY IN WATER, wt. % at Deg F:	Insoluble
VISCOSITY OF LIQUID, cSt at Deg F:	1.9 at 68
SP. GRAV. OF VAPOR, at 1 atm (Air=1):	5.81
FREEZING/MELTING POINT, Deg F:	-148
EVAPORATION RATE, n-Bu Acetate=1:	Less Than 0.1
BOILING POINT, Deg F:	356 to 424

SECTION 10 STABILITY AND REACTIVITY

STABILITY:

Stable

HAZARDOUS POLYMERIZATION:

Will not occur

CONDITIONS TO AVOID HAZARDOUS POLYMERIZATION:

Not Applicable

MATERIALS AND CONDITIONS TO AVOID INCOMPATIBILITY:

Strong oxidizing agents, inorganic acids, halogenated compounds, halogens, molten sulfur.

HAZARDOUS DECOMPOSITION PRODUCTS:

None

SECTION 11 TOXICOLOGICAL INFORMATION

Please refer to Section 3 for available information on potential health effects.

SECTION 12 ECOLOGICAL INFORMATION

No specific ecological data are available for this product. Please refer to Section 6 for information regarding accidental releases and Section 15 for regulatory reporting information.

SECTION 13 DISPOSAL CONSIDERATIONS

Please refer to Sections 5, 6 and 15 for disposal and regulatory information.

SECTION 14 TRANSPORT INFORMATION

DEPARTMENT OF TRANSPORTATION (DOT):

DOT SHIPPING DESCRIPTION: Combustible liquid, N.O.S., (C12 olefins), Combustible liquid, NA 1993, PG III.
International shipping: Flammable liquid, N.O.S., (C12 olefins), 3, NA 1993, PG III (for all sizes of containers).

SECTION 15 REGULATORY INFORMATION

TSCA:

This product is listed on the TSCA Inventory as a UVCB (Unknown, Variable Composition or Biological) Chemical at CAS Registry Number 68526-58-9

CERCLA:

If this product is accidentally spilled, it is not subject to any special reporting under the requirements of the Comprehensive Environmental Response, Compensation and Liability Act. We recommend you contact local authorities to determine if there may be other local reporting requirements.

SARA TITLE III:

Under the provisions of Title III, Sections 311/312 of the Superfund Amendments and Reauthorization Act, this product is classified into the following hazard categories:

Fire.

This information may be subject to the provisions of the Community Right-to-Know Reporting Requirements (40 CFR 370) if threshold quantity criteria are met.

This product does not contain Section 313 Reportable Ingredients.

SECTION 16 OTHER INFORMATION

NOTES:

1. Air exposure must be minimized to limit build up of peroxides which will concentrate in bottoms if product is distilled.

Product must not be distilled to dryness if peroxide concentration is substantially above 10 ppm as active oxygen since explosive decomposition may occur. Distillate must be immediately inhibited in line from condenser to minimize peroxide formation.

If product is to be distilled washing with aqueous ferrous ammonium sulphate will destroy peroxides but the product must be immediately re-inhibited.

INTERNATIONAL PACKAGE CLASSIFICATION: Flammable liquid, N.O.S., (C12

olefins), 3, NA 1993, PG 111 (for all sizes of containers).

HAZARD RATING SYSTEMS:

This information is for people trained in:
National Paint & Coatings Association's (NPCA)
Hazardous Materials Identification System (HMIS)
National Fire Protection Association (NFPA 704)
Identification of the Fire Hazards of Materials

	NPCA-HMIS	NFPA 704	KEY
HEALTH	2	1	4 = Severe
FLAMMABILITY	2	2	3 = Serious
REACTIVITY	1	1	2 = Moderate
			1 = Slight
			0 = Minimal

CAUTION: HMIS ratings are based on a 0-4 rating scale with 1 representing minimal hazards or risks, and 4 representing significant hazards or risks. Recommended HMIS ratings should not be used in the absence of a fully implemented HMIS hazard communication program.

This information relates to the specific material designated and may not be valid for such material used in combination with any other materials or in any process. Such information is to the best of our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. It is the users responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

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Material Safety Data Sheet

Catalog Number: 150539
Revision date: 26-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
BUTYRIC ACID ETHYL ESTER	105-54-4	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Harmful by inhalation, in contact with skin and if swallowed., Flammable

Category of Danger:

Harmful , Flammable

Principle routes of exposure: Skin

Inhalation: Harmful by inhalation.

Ingestion: Harmful if swallowed.

Skin contact: Harmful in contact with skin.

Eye contact: Risk of serious damage to eyes

Statements of hazard HARMFUL IF SWALLOWED. MAY BE HARMFUL IF ABSORBED THROUGH SKIN OR INHALED.

Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Statement of First Aid In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Call a physician if symptoms occur.

Precautions - ANSI Label Avoid prolonged contact with eyes, skin and clothing. Wash thoroughly after handling. Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Catalog Number: 150539

Product name: BUTYRIC ACID ETHYL ESTER

Page 1 of 6

EPAHO011000392

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes. Remove and wash contaminated clothing before re-use. Consult a physician.

Ingestion: Do not induce vomiting without medical advice.

Eye contact: Rinse immediately with plenty of water, also under the eyelids. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Protection of first-aiders: No information available.

Medical conditions aggravated by exposure: None known.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Use dry chemical, CO₂, water spray or 'alcohol' foam.

Specific hazards:

Burning produces irritant fumes.

Unusual hazards:

None known.

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Specific methods:

Water mist may be used to cool closed containers.

Flash point:

Not determined.

Autoignition temperature:

463 °C (865 °F)

NFPA rating:

NFPA Health:	1
NFPA Flammability:	2
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment.

Environmental precautions:

Prevent product from entering drains.

Methods for cleaning up:

Ground and bond containers when transferring material.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Technical measures/storage conditions:

Keep containers tightly closed in a cool, well-ventilated place. Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible products:

Oxidising and spontaneously flammable products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: PVC or other plastic material gloves.

Skin and body protection: Impervious clothing. Long sleeved clothing.

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Colorless; pineapple-like odor
Physical state:	Liquid
Formula:	C ₆ H ₁₂ O ₂
Molecular weight:	116.2
Melting point/range:	-101 °C; -93 °C
Boiling point/range:	120-121 °C
Density:	0.879 at 20 °C (water = 1)
Vapor pressure:	11.3 mm Hg at 20 °C 20 mm Hg at 28 °C
Evaporation rate:	No data available
Vapor density:	4.0 (air = 1)
Solubility (in water):	Slightly soluble
Flash point:	Not determined
Autoignition temperature:	463 °C (865 °F)

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	-
Conditions to avoid:	Incompatible with strong acids, nitrates, oxidizers. Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

BUTYRIC ACID ETHYL ESTER

RTECS Number:

ET1660000

Selected LD50s and LC50s

Oral LD50 Rat : 13 gm/kg

Dermal LD50 Rabbit : >2 gm/kg

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	No data is available on the product itself.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available
Aquatic toxicity:	May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
BUTYRIC ACID ETHYL ESTER	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
BUTYRIC ACID ETHYL ESTER	1	Not Listed	Not Listed
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
BUTYRIC ACID ETHYL ESTER	Not Listed	Not Listed	Not Listed
Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
BUTYRIC ACID ETHYL ESTER	Not Listed	Not Listed	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
BUTYRIC ACID ETHYL ESTER	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

**Contaminated packaging:
Methods for cleaning up:**

Do not re-use empty containers
Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No: 1180

DOT:

Proper shipping name: Ethyl butyrate
IATA Hazard Label(s): Flammable Liquid
Hazard Class 3 -
Flammable liquid
Packing group: III

Emergency Response Guide Number (ERG): 129

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
BUTYRIC ACID ETHYL ESTER	Not Listed

TDG (Canada):

WHMIS hazard class: B2 flammable liquids



IMDG/IMO

Proper shipping name:

Ethyl butyrate

IMDG - Hazard Classifications
IMDG - Regulated SubstancesIMDG class or division = 3
UN1180

Components

BUTYRIC ACID ETHYL ESTER

U.S. DOT - Appendix B - Marine Pollutan

Not Listed

U.S. DOT - Appendix B - Severe Marine
Pollutants
Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

BUTYRIC ACID ETHYL ESTER

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Inventory - China:

Present

EU EINECS List -

203-306-4; C6H12O2

Inventory - Japan:

2-779

Korean KECL:

KE-03851

Philippines PICCS:

Present

U.S. regulations:

Components

BUTYRIC ACID ETHYL
ESTER

California Proposition 65

Not Listed

Massachusetts Right to
Know List:
[present]New Jersey Right to
Know List:
sn 0862Pennsylvania Right to Know
List:
[present]

Components

BUTYRIC ACID ETHYL
ESTER

Florida substance List:

[present]

Rhode Island Right to
Know List:
Not ListedIllinois - Toxic Air
Contaminants
Not ListedConnecticut - Hazardous Air
Pollutants
Not Listed

Components

BUTYRIC ACID ETHYL
ESTERSARA 313 Emission
reporting/Toxic Release
of Chemicals

Not Listed

CERCLA/SARA - Section NTP:
302 Extremely Haz

Not Listed

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION

Prepared by: Health & Safety

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet



Material Safety Data Sheet

Catalog Number: 154910
Revision date: 24-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 154910

Product name: BUTYL FORMATE

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
BUTYL FORMATE	592-84-7	90 - 100%	None	None

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: May cause irritation to the eyes, skin and respiratory system., Flammable

Category of Danger:

Flammable , Irritant

Principle routes of exposure: Skin

Inhalation: Irritating to respiratory system

Ingestion: Irritating to mouth, throat and stomach

Skin contact: Irritating to skin.

Eye contact: Contact with eyes may cause irritation

ANSI Classification Irritant - eye, skin, respiratory

Statements of hazard May Cause Eye, Skin and Respiratory Tract irritation.

Flammable

Statement of Spill or Leak - ANSI Label Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment.

Statement of First Aid In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician.

Precautions - ANSI Label Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling. Avoid breathing vapors. Avoid prolonged or repeated contact with the skin, eyes or respiratory tract. Wash thoroughly after exposure.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water for at least 15 minutes. Call a physician immediately.

Ingestion: Do not induce vomiting without medical advice.

Eye contact: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Call a physician immediately. Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

Protection of first-aiders: No information available.

Medical conditions aggravated by exposure: None known.

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Use dry chemical, CO₂, water spray or 'alcohol' foam.

Specific hazards:

Burning produces irritant fumes.

Unusual hazards:

None known.

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Specific methods:

Water mist may be used to cool closed containers.

Flash point:

Not determined.

Autoignition temperature:

Not determined.

NFPA rating:

NFPA Health:	1
NFPA Flammability:	3
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment.

Environmental precautions:

Do not flush into surface water or sanitary sewer system.

Methods for cleaning up:

Ground and bond containers when transferring material. Soak up with inert absorbent material.

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Technical measures/storage conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition. Keep containers tightly closed in a cool, well-ventilated place.

Incompatible products:

Oxidising and spontaneously flammable products.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: PVC or other plastic material gloves.

Skin and body protection: Impervious clothing. Long sleeved clothing.

Catalog Number: 154910

Product name: BUTYL FORMATE

Page 2 of 6

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields Goggles
Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance and Odor	Colorless
Physical state:	Liquid
Formula:	C ₅ H ₁₀ O ₂
Molecular weight:	102.1
Melting point/range:	No data available at this time.
Boiling point/range:	No Data available at this time.
Density:	0.89 g/ml
Vapor pressure:	No data available
Evaporation rate:	No data available
Vapor density:	No data available
Solubility (in water):	No data available
Flash point:	Not determined
Autoignition temperature:	Not determined

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage conditions.
Polymerization:	None under normal processing.
Hazardous decomposition products:	Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.
Materials to avoid:	-
Reacts with strong acids, nitrates, oxidizers. May accumulate static electrical charges, and may cause ignition of its vapors.	
Conditions to avoid:	Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION

Product Information

Acute toxicity

Components

BUTYL FORMATE

RTECS Number:

LQ5500000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:	Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.
Local effects:	Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.
Specific effects:	May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.
Primary irritation:	A primary irritant.
Carcinogenic effects:	No data is available on the product itself.
Mutagenic effects:	No data is available on the product itself.
Reproductive toxicity:	No data is available on the product itself.

12. ECOLOGICAL INFORMATION

Mobility:	No data available
Bioaccumulation:	No data available
Ecotoxicity effects:	No data available

Aquatic toxicity:

May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
BUTYL FORMATE	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
BUTYL FORMATE	Not Listed	Not Listed	Not Listed
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
BUTYL FORMATE	Not Listed	Not Listed	Not Listed
Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
BUTYL FORMATE	Not Listed	Not Listed	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
BUTYL FORMATE	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS**Waste from residues / unused products:**

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

Contaminated packaging:

Do not re-use empty containers

Methods for cleaning up:

Ground and bond containers when transferring material
Soak up with inert absorbent material.

14. TRANSPORT INFORMATION

UN/Id No: 1128

DOT:

Proper shipping name: n-Butyl formate
IATA Hazard Label(s): Flammable Liquid
Hazard Class 3 -
Packing group: Flammable liquid
II

Emergency Response Guide Number (ERG): 129

Components	U.S. DOT - Appendix A Table 1 - Reportable Quantities
BUTYL FORMATE	Not Listed

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids
D2b toxic materials

IMDG/IMO

Proper shipping name:

n-Butyl formate

IMDG - Hazard Classifications

IMDG class or division = 3

IMDG - Regulated Substances

UN1128

Components

U.S. DOT - Appendix B - Marine Pollutan

U.S. DOT - Appendix B - Severe Marine

BUTYL FORMATE

Not Listed

Pollutants

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

BUTYL FORMATE

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Inventory - China:

Present

EU EINECS List -

209-772-5; C5H10O2

Inventory - Japan:

2-684

Philippines PICCS:

Present

U.S. regulations:

Components

BUTYL FORMATE

California Proposition 65

Not Listed

Massachusetts Right to

Know List:
[present]

New Jersey Right to

Know List:
sn 0289

Pennsylvania Right to Know

List:
[present]

Components

BUTYL FORMATE

Florida substance List:

[present]

Rhode Island Right to

Know List:
Not Listed

Illinois - Toxic Air

Contaminants
Not Listed

Connecticut - Hazardous Air

Pollutants
Not Listed

Components

BUTYL FORMATE

SARA 313 Emission
reporting/Toxic Release
of Chemicals

Not Listed

CERCLA/SARA - Section NTP:
302 Extremely Haz

Not Listed

None

IARC:

None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

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16. OTHER INFORMATION

Prepared by: Health & Safety

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End of Safety Data Sheet

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

1 Identification of substance:

Product details:

Product name: Butyric acid

Stock number:

36544

L13189

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Butyric acid (CAS# 107-92-6); 100%

Identification number(s):

EINECS Number: 203-532-3

EU Number: 607-135-00-X

3 Hazards identification

Hazard description:



C Corrosive

Information pertaining to particular dangers for man and environment

R 34 Causes burns.

Classification system

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	2
FIRE	1
REACTIVITY	1

Health (acute effects) = 2

Flammability = 1

Reactivity = 1

4 First aid measures

General information

Immediately remove any clothing soiled by the product.

After inhalation

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

(Contd. on page 2)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 1)

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures

Suitable extinguishing agents

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide (CO)

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures

Person-related safety precautions:

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Use neutralizing agent.

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage

Handling**Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

No special measures required.

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Keep container tightly sealed.

(Contd. on page 3)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 2)

Store in cool, dry conditions in well sealed containers.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Avoid contact with the eyes and skin.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands: Impervious gloves**Eye protection:**

Safety glasses

Tightly sealed goggles

Full face protection

Body protection: Protective work clothing.**9 Physical and chemical properties:**

General Information	
Form:	Liquid
Color:	Colorless
Odor:	Unpleasant
Change in condition	
Melting point/Melting range:	-5°C (23°F)
Boiling point/Boiling range:	164°C (327°F)
Sublimation temperature / start:	Not determined
Flash point:	71°C (160°F)
Ignition temperature:	440°C (824°F)
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	2 Vol %
Upper:	10 Vol %
Vapor pressure at 20°C (68°F):	1.12 hPa (1 mm Hg)
Density at 20°C (68°F):	0.96 g/cm ³

(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 3)

Solubility in / Miscibility with
Water at 20°C (68°F): >38 g/l

10 Stability and reactivity

Thermal decomposition / conditions to be avoided:

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Oxidizing agents

Bases

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:

Oral	LD50	2000 mg/kg (rat)
	LDLo	500 mg/kg (mus)
Dermal	LD50	530 µg/kg (rbt)
Irritation of skin	moderate	20 mg/24H (rbt)
		500 mg (rbt)

Primary irritant effect:

on the skin:

Corrosive effect on skin and mucous membranes.

Irritant to skin and mucous membranes.

on the eye:

Strong corrosive effect.

Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Animal studies have shown damage to the gastrointestinal system, kidney, bladder, blood and respiratory tract from butyric acid exposure.

Convulsions have also been reported.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus.

May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

Swallowing will lead to a strong corrosive effect on mouth and throat and to the danger of perforation of esophagus and stomach.

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

USA

(Contd. on page 5)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 4)

12 Ecological information:**General notes:**

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information**DOT regulations:**

Hazard class: 8
Identification number: UN2820
Packing group: III
Hazardous substance: 5000 lbs, 2270 kg
Proper shipping name (technical name): BUTYRIC ACID
Label: 8

Land transport ADR/RID (cross-border)

ADR/RID class: 8 (C3) Corrosive substances
Danger code (Kemler): 80
UN-Number: 2820
Packaging group: III
Description of goods: 2820 BUTYRIC ACID

Maritime transport IMDG:

IMDG Class: 8
UN Number: 2820
Label: 8
Packaging group: III
EMS Number: F-A, S-B

(Contd. on page 6)

USA

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Butyric acid

(Contd. of page 5)

Proper shipping name: BUTYRIC ACID**Air transport ICAO-TI and IATA-DGR:**

ICAO/IATA Class:	8
UN/ID Number:	2820
Label	8
Packaging group:	III
Proper shipping name:	BUTYRIC ACID

15 Regulations**Product related hazard informations:****Hazard symbols:**

C Corrosive

Risk phrases:

34 Causes burns.

Safety phrases:

26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

36 Wear suitable protective clothing.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.**Contact:** Darrell R. Sanders

USA

MATERIAL SAFETY DATA SHEET

Date Printed: 07/12/2006

Date Updated: 02/06/2006

Version 1.4

Section 1 - Product and Company Information

Product Name BUTYL ETHER
Product Number 34460
Brand FLUKA

Company Sigma-Aldrich
Address 3050 Spruce Street
SAINT LOUIS MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5052
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
BUTYL ETHER	142-96-1	No
Formula	C8H18O	
Synonyms	1-Butoxybutane * Butyl ether * n-Butyl ether * Dibutyl ether * Di-n-butyl ether * n-Dibutyl ether * Dibutyl oxide * Ether butylique (French) * 1,1'-Oxybis(butane)	
RTECS Number:	EK5425000	

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable. Irritant.
Irritating to eyes, respiratory system and skin. Harmful to
aquatic organisms, may cause long-term adverse effects in the
aquatic environment.

HMIS RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 1

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 1

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is
conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give

artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE

In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE

In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS

Flammable Hazards: Yes

Peroxide Former: Yes

EXPLOSION HAZARDS

Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT

77 °F 25 °C Method: closed cup

EXPLOSION LIMITS

Lower: 0.9 % Upper: 8.5 %

AUTOIGNITION TEMP

185 °C

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL

Evacuate area. Shut off all sources of ignition.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING

User Exposure: Avoid breathing vapor. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

STORAGE

Suitable: Keep container closed. Keep away from heat, sparks, and open flame.

SPECIAL REQUIREMENTS

Store under inert gas. Air and light sensitive.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS

Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.

Hand: Compatible chemical-resistant gloves.

Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES

Wash thoroughly after handling. Wash contaminated clothing before reuse.

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Liquid	
Property	Value	At Temperature or Pressure
Molecular Weight	130.23 AMU	
pH	5.2	
BP/BP Range	140.0 - 142.0 °C	
MP/MP Range	- 98.0 °C	
Freezing Point	N/A	
Vapor Pressure	4.8 mmHg	20 °C
Vapor Density	4.48 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.764 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	77 °F 25 °C	Method: closed cup
Explosion Limits	Lower: 0.9 %	
	Upper: 8.5 %	

Flammability	N/A
Autoignition Temp	185 °C
Refractive Index	1.3988
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	Solubility in Water:10 mg/ml H2O, 20°C

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.

Conditions to Avoid: Light. Air. Forms explosive peroxides on prolonged storage

Materials to Avoid: Oxidizing agents, Strong acids.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.

Skin Absorption: May be harmful if absorbed through the skin.

Eye Contact: Causes eye irritation.

Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion: May be harmful if swallowed.

SIGNS AND SYMPTOMS OF EXPOSURE

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral

Rat

7400 mg/kg

LD50

Inhalation

Mouse

169,000 mg/m3

LC50

Remarks: Behavioral:General anesthetic.

Skin

Rabbit

10 ML/KG

LD50

IRRITATION DATA

Eyes

Human

200 ppm

15M

Skin
Rabbit
380 mg
Remarks: Open irritation test

Section 12 - Ecological Information

ACCUMULATION

Bioaccumulation Potential: Indication of bioaccumulation.

ACUTE ECOTOXICITY TESTS

Test Type: LC50 Fish
Time: 96 h
Value: < 100 mg/l

ADDITIONAL RESULTS/DATA FROM RELEVANT SCIENTIFIC EXPERIMENTS

Avoid contamination of the environment

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION

Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: Dibutyl ethers
UN#: 1149
Class: 3
Packing Group: Packing Group III
Hazard Label: Flammable liquid
PIH: Not PIH

IATA

Proper Shipping Name: Dibutyl ethers
IATA UN Number: 1149
Hazard Class: 3
Packing Group: III

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION

Symbol of Danger: Xi
Indication of Danger: Irritant.
R: 10-36/37/38-52/53
Risk Statements: Flammable. Irritating to eyes, respiratory system and skin. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
S: 61
Safety Statements: Avoid release to the environment. Refer to special instructions/safety data sheets.

US CLASSIFICATION AND LABEL TEXT

Indication of Danger: Flammable. Irritant.
Risk Statements: Irritating to eyes, respiratory system and skin. Harmful to aquatic organisms, may cause long-term adverse

effects in the aquatic environment.
Safety Statements: Avoid release to the environment. Refer to
special instructions/safety data sheets.

UNITED STATES REGULATORY INFORMATION

SARA LISTED: No

TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION

WHMIS Classification: This product has been classified in
accordance with the hazard criteria of the CPR, and the MSDS
contains all the information required by the CPR.

DSL: Yes

NDSL: No

Section 16 - Other Information

DISCLAIMER

For R&D use only. Not for drug, household or other uses.

WARRANTY

The above information is believed to be correct but does not
purport to be all inclusive and shall be used only as a guide. The
information in this document is based on the present state of our
knowledge and is applicable to the product with regard to
appropriate safety precautions. It does not represent any
guarantee of the properties of the product. Sigma-Aldrich Inc.,
shall not be held liable for any damage resulting from handling or
from contact with the above product. See reverse side of invoice
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**ALDON
CORPORATION**

221 Rochester Street
Avon, New York 14414-9409
(585) 226-6177

MSDS No.: BB0254
Effective Date: May 18, 2005

MATERIAL SAFETY DATA SHEET

SECTION I NAME 24 HOUR EMERGENCY ASSISTANCE

Product	Butylene Glycol	<div><div><div><div>1</div><div>0</div><div>1</div><div>0</div></div><div><div><div><div>CHEMTREC 800-424-9300 Day 585-226-6177</div><div>NFPA</div><div>HAZARD RATING</div><div><div><div>MINIMAL</div><div>SLIGHT</div><div>MODERATE</div><div>SERIOUS</div><div>SEVERE</div></div><div><div>0</div><div>1</div><div>2</div><div>3</div><div>4</div></div></div></div><div><div><div>Health</div><div>1</div></div><div><div>Fire</div><div>1</div></div><div><div>Reactivity</div><div>0</div></div></div><div><div>HMIS *</div><div></div></div></div></div></div></div>
Chemical Synonyms	1,3-Butanediol	
Formula	HOCH ₂ CH ₂ CHOHCH ₃	
Unit Size	up to 180 Kg.	
C.A.S. No.	107-88-0	

SECTION II INGREDIENTS OF MIXTURES

Principal Component(s)	%	TLV Units
1,3-Butylene glycol	100%	None established.
		See Section V.

CAUTION! KEEP AWAY FROM HEAT, SPARKS AND FLAME.

ALWAYS OPEN CONTAINER SLOWLY TO ALLOW EXCESS PRESSURE TO VENT.

SECTION III PHYSICAL DATA

Melting Point (°F)	Freezing point -50°C (-58°F)	Specific Gravity (H ₂ O = 1)	1.005 @ 20/20°C
Boiling Point (°F)	207.5°C (406°F)	Percent Volatile by Volume (%)	100%
Vapor Pressure (mm Hg)	0.06 @ 20°C	Evaporation Rate (Butyl acetate = 1)	Nil
Vapor Density (Air=1)	3.1 @ 20°C		
Solubility in Water	Complete.		
Appearance & Odor	Clear, colorless, mobile syrupy liquid; essentially odorless.		

SECTION IV FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used)	121°C (250°F) TOC ASTM D1310	Flammable Limits in Air % by Volume	N/A	Lower	Upper
Extinguisher Media	Use carbon dioxide or dry chemical for small fires. Alcohol-type aqueous film-forming foam or water spray for large fires.				

SPECIAL FIREFIGHTING PROCEDURES

If potential for exposure to vapors or products of combustion exists, wear complete personal protective equipment, including self-contained breathing apparatus with full facepiece operated in pressure-demand or other positive-pressure mode. Water spray can be used to reduce intensity of flames and to dilute spills to non-flammable mixture. Use water spray to cool fire exposed structures and vessels.

UNUSUAL FIRE AND EXPLOSION HAZARDS

Foam or water can cause frothing.

D.O.T. NON-REGULATED.

Approved by Department of Labor "essentially similar" to form OSHA-20

SECTION V HEALTH HAZARD DATA

BB0254

Threshold Limited Value

None established by ACGIH. RTECS No. EK0440000 Toxicity data: ori-rat LD50: 23 gm/kg; scu-rat LD50: 20 gm/kg; ori-mus LD50: 12980 mg/kg; ori-gpg LD50: 11 gm/kg.

Effects of Overexposure

Practically non-toxic to animals (oral LD50 rats: 23gm/kg.). Essentially non-irritating to skin and eyes. Significant exposure to this chemical may adversely affect people with chronic disease of the Central Nervous System, blood, skin and/or cardiovascular system. Target organs: None known.

Emergency and First Aid Procedures

INGESTION: Call physician or Poison Control Center immediately. Induce vomiting only if advised by appropriate medical personnel. Never give anything by mouth to an unconscious person. **EYES:** Check for and remove contact lenses. Flush thoroughly with water for at least 15 minutes, lifting upper and lower eyelids occasionally. Get immediate medical attention. **SKIN:** Remove contaminated clothing. Flush thoroughly with mild soap and water. If irritation occurs, get medical attention. **INHALATION:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

SECTION VI REACTIVITY DATA

Stability	Unstable	Stable	Conditions to Avoid
		X	Heat, sparks or flame.
Incompatibility (Materials to Avoid)	Sulfuric acid, phosphoric acid and other dehydrating agents; Nitric acid, oxygen hydrogen peroxide, perchloric acid and other strong oxidizing agents.		

Hazardous

Decomposition Products

Carbon monoxide, butadiene.

Hazardous Polymerization

Conditions to Avoid

May Occur	Will Not Occur	Flame.
	X	

SECTION VII SPILL OR LEAK PROCEDURES

Steps to be taken in case material is released or spilled

Eliminate ignition sources. Absorb spill in absorbent material, shovel into suitable container for proper disposal. Avoid runoff into storm sewers and ditches which lead to natural waterways.

Waste Disposal Method

Discharge, treatment, or disposal may be subject to Federal, State or Local laws. These disposal guidelines are intended for the disposal of catalog-size quantities only.

Dispose of in accordance with federal, state and local regulations.

SECTION VIII SPECIAL PROTECTION INFORMATION

Respiration Protection (Specify Type)	Use a NIOSH/MSHA approved respirator with organic vapor cartridge.			
Ventilation	Local Exhaust	Recommended.	Special	No.
	Mechanical (General)	Recommended.	Other	No.
Protective Gloves	Neoprene or rubber.		Eye Protection	Chemical safety goggles.

Other Protective Equipment: Lab coat, apron, eye wash station, proper gloves, safety shower.

SECTION IX SPECIAL PRECAUTIONS

Precautions to be Taken in Handling & Storing

Always open containers slowly to allow any excess pressure to vent. Store in 15-27°C (60-80°F) range to minimize taste and odor buildup. Keep away from heat, sparks and flame. Wash thoroughly after handling.

Other Precautions

Read label on container before using. Do not wear contact lenses when working with chemicals. For laboratory use only. Not for drug, food or household use. Keep out of reach of children.

Avoid contact with skin, eyes and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Remove and wash contaminated clothing.

Revision No.	2	Date	05/18/05	Approved	Michael Raszeja	Chemical Safety Coordinator	MR
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The information contained herein is furnished without warranty of any kind. Employers should use this information only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use of these materials and the safety and health of employees. * Hazardous Materials Industrial Standards. Printed on recycled paper.



THE DOW CHEMICAL COMPANY MATERIAL SAFETY DATA SHEET



Product Name: BUTYL CELLOSOLVE(TM) ACETATE
MSDS#: 834

Effective Date: 07/15/2003
Page 1 of 15

Dow (hereinafter, and for purposes of this MSDS only, refers to The Dow Chemical Company and to Dow Chemical Canada Inc.) encourages and expects you to read and understand the entire MSDS, as there is important information throughout the document. Dow expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

1.1 IDENTIFICATION

Product Name BUTYL CELLOSOLVE(TM) ACETATE

1.2 COMPANY IDENTIFICATION

The Dow Chemical Company
Midland, MI 48674

1.3 EMERGENCY TELEPHONE NUMBER

24-HOUR EMERGENCY TELEPHONE NUMBER: (989)636-4400.
Customer Information Number: 1-800-258-2436.

* or ® Indicates a Trademark of The Dow Chemical Company.

MATERIAL SAFETY DATA SHEET

Product Name: BUTYL CELLOSOLVE(TM) ACETATE
MSDS#: 834

Effective Date: 07/15/2003
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2. COMPOSITION INFORMATION

Component	CAS #	Amount (%W/W)
Ethylene glycol butyl ether acetate	112-07-2	>= 99 <= 100%

3. HAZARDS IDENTIFICATION

3.1 EMERGENCY OVERVIEW

Appearance	Colorless
Physical State	Liquid
Odor	Ethereal, Fruity
Hazards of product	COMBUSTIBLE LIQUID AND VAPOR. MAY CAUSE EYE IRRITATION. MAY BE HARMFUL IF ABSORBED THROUGH SKIN. ISOLATE AREA.

3.2 POTENTIAL HEALTH EFFECTS

Effects of Single Acute Overexposure

Inhalation Excessive exposure may cause irritation to upper respiratory tract (nose and throat). Prolonged excessive exposure to mist may cause serious adverse effects, even death.

Eye Contact May cause slight eye irritation. Effects may include discomfort and redness. Vapor or mist may cause eye irritation.

Skin Contact Prolonged contact is essentially nonirritating to skin.

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Skin Absorption Prolonged or widespread skin contact may result in absorption of potentially harmful amounts.

Swallowing Low toxicity if swallowed. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause injury.

Chronic, Prolonged or Repeated Overexposure

Other Effects of Overexposure No information available.

See Section 11 for toxicological information and additional information about potential health effects.

3.3 POTENTIAL ENVIRONMENTAL EFFECTS

See Section 12 for Ecological Information.

4. FIRST AID PROCEDURES

4.1 INHALATION

Move person to fresh air; if effects occur, consult a physician.

4.2 EYE CONTACT

Flush eyes thoroughly with water for several minutes. Remove contact lenses after the initial 1-2 minutes and continue flushing for several additional minutes. If effects occur, consult a physician, preferably an ophthalmologist.

4.3 SKIN CONTACT

Immediately flush skin with water while removing contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Discard contaminated articles including leather items such as shoes.

4.4 SWALLOWING

If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

4.5 NOTES TO PHYSICIAN

Respiratory symptoms, including pulmonary edema, may be delayed. Persons receiving significant exposure should be observed 24-48 hours for signs of respiratory distress.

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No specific antidote.

Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE FIGHTING MEASURES

5.1 FLAMMABLE PROPERTIES - REFER TO SECTION 9, PHYSICAL AND CHEMICAL PROPERTIES

5.2 EXTINGUISHING MEDIA

Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

5.3 FIRE FIGHTING PROCEDURES

Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Do not use direct water stream. May spread fire. Move container from fire area if this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

5.4 SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS

Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots, and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

5.5 UNUSUAL FIRE AND EXPLOSION HAZARDS

Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.6 HAZARDOUS COMBUSTION PRODUCTS

During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Carbon monoxide. Carbon dioxide.

6. ACCIDENTAL RELEASE MEASURES

Steps to be Taken if Material is Released or Spilled:

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Product Name: BUTYL CELLOSOLVE(TM) ACETATE
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Contain spilled material if possible. Collect in suitable and properly labeled containers. Dilute with large quantities of water. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Isolate area. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling for additional precautionary measures.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

7.1 HANDLING

General Handling

Keep away from heat, sparks and flame.

Avoid prolonged contact with eyes, skin and clothing.

Wash thoroughly after handling.

Containers, even those that have been emptied, can contain vapors. Do not cut, drill, grind, weld, or perform similar operations on or near empty containers.

Ventilation

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines. Use only with adequate ventilation.

Other Precautions

Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

7.2 STORAGE

Store in the following material(s): carbon steel. stainless steel. high-baked, phenolic-lined tanks. Do not store in: Aluminum. Copper. galvanized iron. galvanized steel. Viton. neoprene. nitrile. natural rubber.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

8.1 EXPOSURE LIMITS

Component	Exposure Limits	Skin	Form
------------------	------------------------	-------------	-------------

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Ethylene glycol butyl ether 20 ppm TWA8 ACGIH
acetate

In the Exposure Limits Chart above, if there is no specific qualifier (i.e., Aerosol) listed in the Form Column for a particular limit, the listed limit includes all airborne forms of the substance that can be inhaled.

A "Yes" in the Skin Column indicates a potential significant contribution to overall exposure by the cutaneous (skin) route, including mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance. A "Blank" in the Skin Column indicates that exposure by the cutaneous (skin) route is not a potential significant contributor to overall exposure.

8.2 PERSONAL PROTECTION

Respiratory Protection:

Atmospheric levels should be maintained below the exposure guideline. When respiratory protection is required, use an approved air-purifying or positive-pressure supplied-air respirator depending on the potential airborne concentration.

For emergency and other conditions where the exposure guideline may be exceeded, use an approved positive-pressure self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply.

In confined or poorly ventilated areas, use an approved self-contained breathing apparatus or positive pressure airline with auxiliary self-contained air supply.

Ventilation:

Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

Use only with adequate ventilation.

Eye Protection:

Use safety glasses.

If exposure causes eye discomfort, use a full-face respirator.

Other Protective Equipment:

Use protective clothing chemically resistant to this material. Selection of specific items such as faceshield, gloves, boots, apron, or full body suit will depend on operation.

Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly.

Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

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9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State: Liquid

Appearance: Colorless

Odor: Ethereal, Fruity

Flash Point - Closed Cup: 74 °C 165 °F , Tag Closed Cup ASTM D 56

Flammable Limits In Air:

Lower 0.5 %(V)
Upper 8.54 %(V) 135 °C, 275 °F

Autoignition Temperature: No test data available.

Vapor Pressure: 0.2 mmHg 20 °C

Boiling Point (760 mmHg): 192 °C 377 °F

Vapor Density (air = 1): 6

Specific Gravity (H2O = 1): 0.972 20 °C / 20 °C

Freezing Point: -64 °C -83 °F

Melting Point: Not applicable.

Solubility in Water (by weight): 2 % 20 °C

pH: No test data available.

Molecular Weight: 160 g/mol

Octanol/Water Partition Coefficient - Measured: , 1.51 - 1.79

Octanol/Water Partition Coefficient - Calculated by Structural Fragment Method:
1.57

Evaporation Rate (Butyl Acetate = 1): 0.04

Percent Volatiles: 100 Wt%

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10. STABILITY AND REACTIVITY

10.1 STABILITY/INSTABILITY Thermally stable at typical use temperatures.

Conditions to Avoid: Product can oxidize at elevated temperatures. Generation of gas during decomposition can cause pressure in closed systems.

Incompatible Materials: Avoid contact with: Strong acids. Strong bases. Strong oxidizers.

Thermal Decomposition: Decomposition products depend upon temperature, air supply and the presence of other materials. Decomposition products can include and are not limited to: Aldehydes. Ketones. Organic acids.

10.2 HAZARDOUS POLYMERIZATION Will not occur.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY

Peroral

Rat; LD50 = 7250 mg/kg

Percutaneous

Rabbit; LD50 = 1540 mg/kg

CHRONIC TOXICITY AND CARCINOGENICITY

CARCINOGENICITY CLASSIFICATIONS

Component	Agency	Classification
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Ethylene glycol butyl ether ACGIH
acetate

A3: Confirmed Animal Carcinogen
with Unknown Relevance to
Humans

12. ECOLOGICAL INFORMATION

12.1 ENVIRONMENTAL FATE

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. The rate constant for the vapor phase reaction with photochemically produced hydroxyl radicals at 25°C is estimated to be: 2.12×10^{-11} cm³/molecule-sec. at 25°C. Material is ultimately biodegradable. Reaches > 70% mineralization in OECD test(s) for inherent biodegradability. Biodegradation reached in Modified Zahn-Wellens/EMPA Test (OECD Test No. 302 B) after 28 days: 77 - 90%. Mean degradation reached in Continuous Activated Sludge assay (OECD Test No. 303 A): 96.7% in 3 hr. Biodegradation reached in Modified MITI Test (I) (OECD Test No. 301 C) after 28 days: 88%.

BOD (% Oxygen consumption)

	Day 5	Day 10	Day 15	Day 20	Day 28/30
	53 %	69 - 80 %		72 - 80 %	

12.2 ECOTOXICITY

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested). Inhibitory concentration (IC50) in OECD Activated Sludge Respiration Inhibition Test (OECD Test No. 209) is: 900 mg/L in 30 min., The 16-h growth inhibition EC50 in bacteria is: 2800 mg/L.

Toxicity to Aquatic Invertebrates

water flea (Daphnia magna); Acute LC50

Result value: 140 mg/L

Toxicity to Aquatic Invertebrates

water flea (Daphnia magna); Acute immobilization EC50

Result value: (37 - 180) mg/L

Toxicity to Aquatic Plants

alga (Scenedesmus sp.); Growth inhibition; EC50

Result value: > 500 mg/L

MATERIAL SAFETY DATA SHEET

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Toxicity to Fish

fathead minnow (*Pimephales promelas*); Acute LC50

Result value: 22 - 31 mg/L

Toxicity to Fish

golden orfe (*Leuciscus idus*); Acute LC50

Result value: 80 mg/L

12.3 FURTHER INFORMATION

Bioconcentration potential is low ($BCF < 100$ or $\log P_{ow} < 3$). Potential for mobility in soil is very high (K_{oc} between 0 and 50). Soil organic carbon/water partition coefficient (K_{oc}) is estimated to be: 26-224 Henry's Law Constant (H) is estimated to be: 5.27×10^{-6} atm-m³/mole at 25°C.

Theoretical Oxygen Demand (THOD) - calculated:: 2.10 mg/mg

Octanol/Water Partition Coefficient - Measured: , 1.51 - 1.79

Octanol/Water Partition Coefficient - Calculated by Structural Fragment Method: 1.57

13. DISPOSAL CONSIDERATIONS

13.1 DISPOSAL

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION 2 (Composition/ Information on Ingredients). FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details .

14. TRANSPORT INFORMATION

MATERIAL SAFETY DATA SHEET

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14.1 U.S. D.O.T.

NON-BULK

Proper Shipping Name : NOT REGULATED

BULK

Proper Shipping Name : COMBUSTIBLE LIQUID, NOS

Technical Name : ETHYLENE GLYCOL MONOBUTYL ETHER ACETATE

Hazard Class : COMBUSTIBLE LIQUID

ID Number : NA1993

Packing Group : PG III

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. REGULATORY INFORMATION

15.1 FEDERAL/NATIONAL

OSHA HAZARD COMMUNICATION:

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 313

This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act 1986 and 40 CFR Part 372.

Component	CAS #	Amount
Glycol Ethers	Not available	<= 100.0000%

MATERIAL SAFETY DATA SHEET

Product Name: BUTYL CELLOSOLVE(TM) ACETATE
MSDS#: 834

Effective Date: 07/15/2003
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COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (CERCLA) SECTION 103

This product contains the following substances subject to CERCLA Section 103 reporting requirements and are listed in 40 CFR Part 302.4.

Component	CAS #	Amount
Ethylene glycol monoethyl ether	110-80-5	<= 0.0100%
Acetic acid	64-19-7	<= 0.0006%

In addition, this product contains other Glycol Ether(s) which, although included as a broad category on the CERCLA hazardous substance list, has not been assigned a reportable quantity.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTION 302

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT OF 1986 TITLE III (EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT) SECTIONS 311 AND 312

Delayed (Chronic) Health Hazard : No
Fire Hazard : Yes
Immediate (Acute) Health Hazard : Yes
Reactive Hazard : No
Sudden Release of Pressure Hazard : No

TOXIC SUBSTANCES CONTROL ACT (TSCA)

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements.

EUROPEAN INVENTORY OF EXISTING COMMERCIAL CHEMICAL SUBSTANCES (EINECS)

The components of this product are on the EINECS inventory or are exempt from EINECS inventory requirements.

CEPA - DOMESTIC SUBSTANCES LIST (DSL)

MATERIAL SAFETY DATA SHEET

Product Name: BUTYL CELLOSOLVE(TM) ACETATE
MSDS#: 834

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All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

15.2 STATE/LOCAL

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT TO KNOW ACT): PENNSYLVANIA HAZARDOUS SUBSTANCES LIST AND/OR PENNSYLVANIA ENVIRONMENTAL HAZARDOUS SUBSTANCE LIST:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Glycol Ethers	Not available	<= 100.0000%

PENNSYLVANIA (WORKER AND COMMUNITY RIGHT TO KNOW ACT): PENNSYLVANIA SPECIAL HAZARDOUS SUBSTANCES LIST:

To the best of our knowledge this product does not contain chemicals at levels which require reporting under this statute.

CALIFORNIA PROPOSITION 65 (SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986)

WARNING: This product contains a chemical(s) known to the State of California to cause birth defects or other reproductive harm.

Component	CAS #	Amount
Ethylene glycol monoethyl ether	110-80-5	<= 0.0100%
Ethylene glycol monoethyl ether acetate	111-15-9	<= 0.0060%

CALIFORNIA SCAQMD RULE 443.1 (SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT RULE 443.1, LABELING OF MATERIALS CONTAINING ORGANIC SOLVENTS)

VOC: Vapor pressure 0.2 mmHg @ 20° C
953 g/l
953 g/l less water and less exempted solvents

MATERIAL SAFETY DATA SHEET

Product Name: BUTYL CELLOSOLVE(TM) ACETATE
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This section provides selected regulatory information on this product including its components. This is not intended to include all regulations. It is the responsibility of the user to know and comply with all applicable rules, regulations and laws relating to the product being used.

16. OTHER INFORMATION

16.1 ADDITIONAL INFORMATION

Additional information on this and other Dow products may be obtained by visiting our web page at www.dow.com.

Additional information on this product may be obtained by calling Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada).

16.2 HAZARD RATING SYSTEM

NFPA ratings for this product are: H - 2 F - 2 R - 0

These ratings are part of a specific hazard communication program and should be disregarded where individuals are not trained in the use of this hazard rating system. You should be familiar with the hazard communication programs applicable to your workplace.

16.3 RECOMMENDED USES AND RESTRICTIONS

An oxygenated solvent-

For industrial consumption as a process raw material.

For industrial consumption as a component of a reaction system.

For industrial formulation for inclusion in a final product.

For industrial use as a process aid.

For industrial formulation as a process control material.

For industrial conversion as a raw material for manufacture of articles or goods.

For industrial use.

Dow recommends that you use this product in a manner consistent with the listed use. If your intended use is not consistent with Dow's stated use, please contact Dow's Customer Information Group at 1-800-258-2436 (U.S.) or 1-800-331-6451 (Canada) for more information.

MATERIAL SAFETY DATA SHEET

Product Name: BUTYL CELLOSOLVE(TM) ACETATE
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16.4 REVISION

Version: 6.

Revision: 07/15/2003

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

16.5 LEGEND

Bacterial/NA	Non Acclimated Bacteria
F	Fire
H	Health
IHG	Industrial Hygiene Guideline
N/A	Not available
NFPA	National Fire Protection Association
O	Oxidizer
R	Reactivity
TS	Trade secret
VOL/VOL	Volume/Volume
W	Water Reactive
W/W	Weight/Weight

NOTICE: Dow urges each customer or recipient of this MSDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this MSDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given., Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that its activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of Dow, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product., Due to the proliferation of sources for information such as manufacturer-specific MSDSs, Dow is not and cannot be responsible for MSDSs obtained from any source other than Dow. If you have obtained a Dow MSDS from a non-Dow source or if you are not sure that a Dow MSDS is current, please contact Dow for the most current version.

MATERIAL SAFETY DATA SHEET

R6K25
06 00

Section 1 -- PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NUMBER

R6K25

HMIS CODES

Health	2
Flammability	2
Reactivity	0

PRODUCT NAME

Butyl Cellosolve

MANUFACTURER'S NAME

THE SHERWIN-WILLIAMS COMPANY
101 Prospect Avenue N.W.
Cleveland, OH 44115

EMERGENCY TELEPHONE NO.

(216) 566-2917

DATE OF PREPARATION

02-JUL-06

INFORMATION TELEPHONE NO.

(216) 566-2902

Section 2 -- COMPOSITION/INFORMATION ON INGREDIENTS

% by WT	CAS No.	INGREDIENT	UNITS	VAPOR PRESSURE
100	111-76-2	2-Butoxyethanol		
		ACGIH TLV	20 ppm	0.88 mm
		OSHA PEL	25 ppm	

Section 3 -- HAZARDS IDENTIFICATION

ROUTES OF EXPOSURE

INHALATION of vapor or spray mist.

EYE or SKIN contact with the product, vapor or spray mist.

Contains alcohols and acetates which can be absorbed through the skin.

EFFECTS OF OVEREXPOSURE

EYES: Irritation.

SKIN: Prolonged or repeated exposure may cause irritation.

INHALATION: Irritation of the upper respiratory system.

May cause nervous system depression. Extreme overexposure may result in unconsciousness and possibly death.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

Headache, dizziness, nausea, and loss of coordination are indications of excessive exposure to vapors or spray mists.

Redness and itching or burning sensation may indicate eye or excessive skin exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None generally recognized.

CANCER INFORMATION

For complete discussion of toxicology data refer to Section 11.

Continued on page 2

=====
Section 4 -- FIRST AID MEASURES
=====

EYES: Flush eyes with large amounts of water for 15 minutes.
Get medical attention.
SKIN: Wash affected area thoroughly with soap and water.
Remove contaminated clothing and launder before re-use.
INHALATION: If affected, remove from exposure. Restore breathing.
Keep warm and quiet.
INGESTION: Do not induce vomiting.
Get medical attention immediately.

=====
Section 5 -- FIRE FIGHTING MEASURES
=====

FLASH POINT	LEL	UEL
143 F PMCC	1.1	10.6

FLAMMABILITY CLASSIFICATION

Combustible, Flash above 99 and below 200 F

EXTINGUISHING MEDIA

Carbon Dioxide, Dry Chemical, Foam

UNUSUAL FIRE AND EXPLOSION HAZARDS

Closed containers may explode when exposed to extreme heat.

Application to hot surfaces requires special precautions.

During emergency conditions overexposure to decomposition products may cause a health hazard. Symptoms may not be immediately apparent. Obtain medical attention.

SPECIAL FIRE FIGHTING PROCEDURES

Full protective equipment including self-contained breathing apparatus should be used.

Water spray may be ineffective. If water is used, fog nozzles are preferable. Water may be used to cool closed containers to prevent pressure build-up and possible autoignition or explosion when exposed to extreme heat.

=====
Section 6 -- ACCIDENTAL RELEASE MEASURES
=====

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED

Remove all sources of ignition. Ventilate the area.

Remove with inert absorbent.

=====
Section 7 -- HANDLING AND STORAGE
=====

STORAGE CATEGORY

DOL Storage Class IIIA

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE

Contents are COMBUSTIBLE. Keep away from heat and open flame.

Consult NFPA Code. Use approved Bonding and Grounding procedures.

Keep container closed when not in use. Transfer only to approved containers with complete and appropriate labeling. Do not take internally. Keep out of the reach of children.

Continued on page 3

=====

Section 8 -- EXPOSURE CONTROLS/PERSONAL PROTECTION

PRECAUTIONS TO BE TAKEN IN USE

Use only with adequate ventilation.

Avoid contact with skin and eyes. Avoid breathing vapor and spray mist.

Wash hands after using.

VENTILATION

Local exhaust preferable. General exhaust acceptable if the exposure to materials in Section 2 is maintained below applicable exposure limits. Refer to OSHA Standards 1910.94, 1910.107, 1910.108.

RESPIRATORY PROTECTION

If personal exposure cannot be controlled below applicable limits by ventilation, wear a properly fitted organic vapor/particulate respirator approved by NIOSH/MSHA for protection against materials in Section 2.

PROTECTIVE GLOVES

Wear gloves which are recommended by glove supplier for protection against materials in Section 2.

EYE PROTECTION

Wear safety spectacles with unperforated sideshields.

OTHER PROTECTIVE EQUIPMENT

Use of barrier cream on exposed skin is recommended.

OTHER PRECAUTIONS

Intentional misuse by deliberately concentrating and inhaling the contents can be harmful or fatal.

=====

Section 9 -- PHYSICAL AND CHEMICAL PROPERTIES

PRODUCT WEIGHT	7.49 lb/gal	897 g/l
SPECIFIC GRAVITY	0.90	
BOILING POINT	325 - 343 F	162 - 172 C
MELTING POINT	Not Available	
VOLATILE VOLUME	100 %	
EVAPORATION RATE	Slower than ether	
VAPOR DENSITY	Heavier than air	
SOLUBILITY IN WATER	N.A.	
VOLATILE ORGANIC COMPOUNDS (VOC Theoretical - As Packaged)		
7.49 lb/gal 897 g/l	Less Water and Federally Exempt Solvents	
7.49 lb/gal 897 g/l	Emitted VOC	

=====

Section 10 -- STABILITY AND REACTIVITY

STABILITY -- Stable

CONDITIONS TO AVOID

None known.

INCOMPATIBILITY

None known.

HAZARDOUS DECOMPOSITION PRODUCTS

By fire: Carbon Dioxide, Carbon Monoxide

HAZARDOUS POLYMERIZATION

Will not occur

Continued on page 4

=====
Section 11 -- TOXICOLOGICAL INFORMATION
=====

CHRONIC HEALTH HAZARDS

No ingredient in this product is an IARC, NTP or OSHA listed carcinogen.

Prolonged overexposure to solvent ingredients in Section 2 may cause adverse effects to the liver, urinary and blood forming systems.

Reports have associated repeated and prolonged overexposure to solvents with permanent brain and nervous system damage.

=====

TOXICOLOGY DATA

CAS No.	Ingredient Name
---------	-----------------

111-76-2	2-Butoxyethanol
	LC50 RAT 4HR Not Available
	LD50 RAT 470 mg/kg

=====
Section 12 -- ECOLOGICAL INFORMATION
=====

ECOTOXICOLOGICAL INFORMATION

No data available.

=====
Section 13 -- DISPOSAL CONSIDERATIONS
=====

WASTE DISPOSAL METHOD

Waste from this product is not hazardous as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261.

Incinerate in approved facility. Do not incinerate closed container. Dispose of in accordance with Federal, State/Provincial, and Local regulations regarding pollution.

=====
Section 14 -- TRANSPORT INFORMATION
=====

No data available.

=====
Section 15 -- REGULATORY INFORMATION
=====

SARA 313 (40 CFR 372.65C) SUPPLIER NOTIFICATION

CAS No.	CHEMICAL/COMPOUND	% by WT	% Element
	Glycol Ethers	100	

TSCA CERTIFICATION

All chemicals in this product are listed, or are exempt from listing, on the TSCA Inventory.

=====
Section 16 -- OTHER INFORMATION
=====

This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Continued on page 5

The above information pertains to this product as currently formulated, and is based on the information available at this time. Addition of reducers or other additives to this product may substantially alter the composition and hazards of the product. Since conditions of use are outside our control, we make no warranties, express or implied, and assume no liability in connection with any use of this information.



Material Safety Data Sheet



Responsible Care®
A Public Commitment

MSDS DATE: February 22, 2000

PRODUCT NAME: BRINE SOLUTION

24-Hour Emergency Phone Number: 713-433-4595

I. PRODUCT IDENTIFICATION

HMIS HAZARD RATING: HEALTH = 1 FIRE = 0 REACTIVITY = 0

MANUFACTURER: Texas Brine Company, L.L.C.
Pierce Junction
3000 Feldmon Road
Houston, Texas 77045

Corporate
4800 San Felipe
Houston, Texas 77056
1-800-554-8689

Chemical name: Sodium Chloride
CAS: 7647-14-5
Synonyms: Sodium Chloride solution, brine
Chemical Formula: NaCl

II. HEALTH HAZARD INFORMATION

Emergency and First Aid

EYES: Immediately flush eyes with direct stream of water for at least 20 minutes holding the eyelids open. If irritation occurs, seek medical attention.

SKIN: Wash with soap and water.

INHALATION: If symptoms develop, remove person to fresh air.

INGESTION: Never give anything by mouth to an unconscious person. Have person drink several glasses of water then induce vomiting. Seek medical attention immediately.

ROUTES OF EXPOSURE

Inhalation – None expected

Skin – Exposure to spray or liquid may cause irritation of skin.

Eye contact – Exposure to spray or liquid may cause irritation of eyes.

BRINE SOLUTION

Ingestion – Ingestion of large amounts may cause irritation of the stomach vomiting and diarrhea. Serious salt poisoning in humans has occurred from both accidental and deliberate ingestion.

Effects of Overexposure

Acute: May cause irritation to skin eyes and digestive tract.

Chronic: Not determined

III. HAZARDOUS COMPONENTS

Component	CAS	OSHA-PEL	ACGIH-TLV	%
Sodium Chloride	7647-14-5	Not established	Not established	24 - 26

This product may contain trace concentrations of petroleum hydrocarbon constituents, including benzene. Laboratory analysis is available upon request.

IV. FIRE & EXPLOSION DATA

Flash point: Not applicable

Autoignition temperature: Not applicable

Flammable limits:

Upper Not applicable

Lower Not applicable

Extinguishing Media: Use agent suitable for surrounding fire. Water, water fog, dry chemical, CO₂, sand or dirt may be used where this product is stored.

Special Fire Fighting Procedures: Non-flammable.

Unusual fire and explosion hazard: Not combustible. No unusual hazards.

V. SPECIAL PROTECTION

Ventilation Requirements: Ventilation is not normally required for salt solutions. Avoid creation of mist or spray. If present, wear appropriate safety clothing and provide local exhaust systems.

Respiratory: Provide mist protection where applicable. Use NIOSH/MSHA approved respirators. Follow requirements of 29 CFR 1910.134.

BRINE SOLUTION

Eye: Wear safety glasses with side shields or chemical goggles where splash hazard exists.

Gloves: Use rubber, vinyl, or neoprene gloves.

Other equipment: Eyewash facility and emergency shower should be in close proximity.

VI. PHYSICAL DATA

Boiling point:	~218 ° F
Freezing point::	Not determined
Vapor pressure:	Not determined
Specific gravity:	1.19 – 1.20
Solubility in water:	26 %
Vapor density:	Not determined
Appearance and odor:	Clear to hazy liquid with a salty odor
pH:	7.2 – 7.5

VII. REACTIVITY DATA

Conditions contributing to instability: Under normal conditions, the material is stable.

Incompatibility: Avoid contact with strong concentrations of mineral acids; sulfuric acid, nitric acid.

Hazardous decomposition products: Hydrogen chloride gas is released on contact with strong mineral acids.

Hazardous polymerization: Will not occur.

VIII. HANDLING & STORING

Precautions: Store in an area that is separate from strong mineral acids. Dike and vent storage tank. Use protective safety equipment as appropriate.

IX. ENVIRONMENTAL PROCEDURES

Spill or release: Contain spill to prevent flow to sewers and streams. Pump into marked container for disposal or reclamation. Brine solutions (salt water) may be fatal to fresh water species. Brine may cause corrosion of metal components.

Waste disposal method: Dispose of spilled material in licensed landfill or as appropriate in accordance with federal, state, and local regulations.

BRINE SOLUTION

X. REGULATORY

All components listed on TSCA: Yes
DOT Proper shipping name: Not regulated
SARA /Title III: Not listed

OSHA regulation 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of as hazard communication program including labeling, material safety data sheets, and training.

XI. REVISION

February 22, 2000

1. Update of site specific information
2. Supersedes 1997 Version

The information herein is given in good faith but no warranty expressed or implied is made.

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Has not been reported.

Section 11 - Toxicological Information

RTECS#:
 CAS# 1310-73-2: WB4900000
 CAS# 7732-18-5: ZC0110000
 CAS# 7778-77-0: TC6615500
 LD50/LC50:
 RTECS: CAS# 1310-73-2: Draize test, rabbit, eye: 400 ug
 Mild; Draize test, rabbit, eye: 1% Severe; Draize test,
 rabbit, eye: 50 ug/24H Severe; Draize test, rabbit, eye: 1
 mg/24H Severe; Draize test, rabbit, skin: 500 mg/24H
 Severe;
 RTECS: CAS# 7732-18-5: Oral, rat: LD50 = >90
 mL/kg;
 RTECS: CAS# 7778-77-0: Skin, rabbit: LD50 = >4640
 mg/kg;
 Carcinogenicity:
 Sodium hydroxide -
 Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
 Water -
 Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
 Potassium phosphate monobasic -
 Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
 Epidemiology:
 Not available
 Teratogenicity:
 Not available
 Reproductive:
 Not available
 Neurotoxicity:
 Not available
 Mutagenicity:
 Not available
 Other:
 Not available

Section 12 - Ecological Information

Other:
 No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical
 is classified as a hazardous waste.
 US EPA guidelines for the classification determination are listed in
 40 CFR Parts 261.3. Additionally, waste generators must consult state
 and local hazardous waste regulations to ensure complete and accurate
 classification.
 RCRA P-Series: None listed.
 RCRA U-Series: None listed.

Section 14 - Transport Information

US DOT
 Shipping Name: Not regulated as a hazardous material
 Hazard Class:
 UN Number:
 Packing Group:
 Canada TPG
 Shipping Name: Not regulated as a hazardous material
 Hazard Class:
 UN Number:
 Packing Group:
 USA RQ: CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ

Section 15 - Regulatory Information

US Federal
 TSCA
 CAS# 1310-73-2 is listed on the TSCA Inventory.
 CAS# 7732-18-5 is listed on the TSCA Inventory.
 CAS# 7778-77-0 is listed on the TSCA Inventory.
 Health & Safety Reporting List
 None of the chemicals are on the Health & Safety Reporting List.
 Chemical Test Rules
 None of the chemicals in this product are under a Chemical Test Rule.
 Section 12b
 None of the chemicals are listed under TSCA Section 12b.
 TSCA Significant New Use Rule
 None of the chemicals in this material have a SNUR under TSCA.
 CERCLA Hazardous Substances and corresponding RQs
 CAS# 1310-73-2: 1000 lb final RQ; 454 kg final RQ
 SARA Section 302 Extremely Hazardous Substances
 None of the chemicals in this product have a TPQ.
 SARA Codes
 CAS # 1310-73-2: acute, reactive.
 CAS # 7778-77-0: acute.
 Section 313
 No chemicals are reportable under Section 313.
 Clean Air Act:
 This material does not contain any hazardous air pollutants.
 This material does not contain any Class 1 Ozone depleters.
 This material does not contain any Class 2 Ozone depleters.
 Clean Water Act:
 CAS# 1310-73-2 is listed as a Hazardous Substance under the CWA.
 None of the chemicals in this product are listed as Priority

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Pollutants under the CWA.
 None of the chemicals in this product are listed as Toxic Pollutants
 under the CWA.
 OSHA:

STATE

Sodium hydroxide can be found on the following state right to know
 lists: California, New Jersey, Pennsylvania, Minnesota,
 Massachusetts.
 Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.
 Potassium phosphate monobasic is not present on state lists from CA,
 PA, MN, MA, FL, or NJ.

California Prop 65

California No Significant Risk Level:
 None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

Risk Phrases:

Safety Phrases: S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 1310-73-2: 1
 CAS# 7732-18-5: Not available
 CAS# 7778-77-0: 1

Canada

CAS# 1310-73-2 is listed on Canada's DSL List
 CAS# 7732-18-5 is listed on Canada's DSL List
 CAS# 7778-77-0 is listed on Canada's DSL List
 Canadian WHMIS Classifications: Not controlled.
 This product has been classified in accordance with the hazard
 criteria of the Controlled Products Regulations and the MSDS
 contains all of the information required by those regulations.
 CAS# 1310-73-2 is listed on Canada's Ingredient Disclosure
 List
 CAS# 7732-18-5 is not listed on Canada's Ingredient
 Disclosure List.
 CAS# 7778-77-0 is not listed on Canada's Ingredient
 Disclosure List.

Section 16 - Other Information

MSDS Creation Date:

11/30/1998

Revision #6 Date

9/11/2007

Revisions were made in Sections:

8, 14

The information above is believed to be accurate and represents the
 best information currently available to us. However, we make no
 warranty of merchantability or any other warranty, express or
 implied, with respect to such information, and we assume no liability
 resulting from its use. Users should make their own investigations to
 determine the suitability of the information for their particular
 purposes. In no event shall the company be liable for any claims,
 losses, or damages of any third party or for lost profits or any
 special, indirect, incidental, consequential, or exemplary damages
 howsoever arising, even if the company has been advised of the
 possibility of such damages.

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Clothing: Wear appropriate gloves to prevent skin exposure.
Wear appropriate protective clothing to minimize contact with skin.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties
Physical State: Liquid
Color: clear, colorless
Odor: odorless
pH: 4.0
Vapor Pressure: Not available
Vapor Density: Not available
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: Not available
Freezing/Melting Point: Not available
Decomposition Temperature: Not available
Solubility in water: soluble
Specific Gravity/Density: 1.0054
Molecular Formula: Solution
Molecular Weight: 0

Section 10 - Stability and Reactivity
Chemical Stability: Stable at room temperature in closed containers under normal storage and handling conditions.

Conditions to Avoid: None reported.
Incompatibilities with Other Materials: None reported.

Hazardous Decomposition Products: Formaldehyde.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTCS#:
CAS# 50-00-0: LP8925000
CAS# 67-56-1: PC1400000
CAS# 877-24-7: C24326000
CAS# 7732-18-5: ZC0110000
LD50/LC50:

RTCS: CAS# 50-00-0: Draize test, rabbit, eye: 750 ug/24H Severe; Draize test, rabbit, eye: 750 ug Severe; Draize test, rabbit, eye: 10 mg Severe; Draize test, rabbit, eye: 37% Severe; Draize test, rabbit, skin: 2 mg/24H Severe; Draize test, rabbit, skin: 50 mg/24H Moderate; Inhalation, mouse: LC50 = 454 mg/m3/4H; Inhalation, mouse: LC50 = 505 mg/m3/2H; Inhalation, rat: LC50 = 203 mg/m3; Inhalation, rat: LC50 = 578 mg/m3/2H; Inhalation, rat: LC50 = 250 ppm/2H; Oral, mouse: LD50 = 42 mg/kg; Oral, mouse: LD50 = 385 mg/kg; Oral, mouse: LD50 = 500 mg/kg; Oral, rat: LD50 = 100 mg/kg; Oral, rat: LD50 = 500 mg/kg; Skin, rabbit: LD50 = 270 uL/kg; Skin, rabbit: LD50 = 270 mg/kg;.

RTCS: CAS# 67-56-1: Draize test, rabbit, eye: 40 mg Moderate; Draize test, rabbit, eye: 100 mg/24H Moderate; Draize test, rabbit, skin: 20 mg/24H Moderate; Inhalation, rabbit: LC50 = 81000 mg/m3/14H; Inhalation, rat: LC50 = 64000 ppm/4H; Oral, mouse: LD50 = 7300 mg/kg; Oral, rabbit: LD50 = 14200 mg/kg; Oral, rat: LD50 = 5600 mg/kg; Skin, rabbit: LD50 = 15800 mg/kg;.

RTCS: CAS# 877-24-7: Dermal, guinea pig: LD50 = >1 gm/kg; Oral, rat: LD50 = >3200 mg/kg;.

RTCS: CAS# 7732-18-5: Oral, rat: LD50 = >90 ml/kg;.

Carcinogenicity:

Formaldehyde -

ACGIH: A2 - Suspected Human Carcinogen

California: carcinogen, initial date 1/1/88 (gas)

NTP: Suspect carcinogen

IARC: Group 1 carcinogen

Methyl alcohol -

Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Potassium Hydrogen Phthalate -

Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Water -

Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology:

No information found

Teratogenicity:

No information found

Reproductive:

No information found

Neurotoxicity:

No information found

Mutagenicity:

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No information found

Other:

Not available

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste.

US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: CAS# 50-00-0: waste number U122. CAS#

67-56-1: waste number U154 (Ignitable waste).

Section 14 - Transport Information

US DOT

Shipping Name:

Not Regulated

Hazard Class:

UN Number:

Packing Group:

Canada TDG

Shipping Name:

Not regulated as a hazardous material

Hazard Class:

UN Number:

Packing Group:

USA RQ: CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ

USA RQ: CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

US Federal

TSCA

CAS# 50-00-0 is listed on the TSCA Inventory.

CAS# 67-56-1 is listed on the TSCA Inventory.

CAS# 877-24-7 is listed on the TSCA Inventory.

CAS# 7732-18-5 is listed on the TSCA Inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 50-00-0: 100 lb final RQ; 45.4 kg final RQ

CAS# 67-56-1: 5000 lb final RQ; 2270 kg final RQ

CAS# 50-00-0: 500 lb TPQ

SARA Codes

CAS # 50-00-0: acute, chronic.

CAS # 67-56-1: acute, flammable.

CAS # 877-24-7: acute.

Section 313

This material contains Formaldehyde (CAS# 50-00-0, 0.05%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

This chemical is not at a high enough concentration to be reportable under Section 313.

Clean Air Act:

CAS# 50-00-0 is listed as a hazardous air pollutant (HAP).

CAS# 67-56-1 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

CAS# 50-00-0 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority

Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

STATE

Formaldehyde can be found on the following state right to know lists:

California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

Methyl alcohol can be found on the following state right to know

lists: California, New Jersey, Pennsylvania, Minnesota,

Massachusetts.

Potassium Hydrogen Phthalate is not present on state lists from CA,

PA, MN, MA, FL, or NJ.

Water is not present on state lists from CA, PA, MN, MA, FL, or NJ.

California Prop 65

The following statement(s) is(are) made in order to comply with

the California Safe Drinking Water Act:

WARNING: This product contains Formaldehyde, a chemical known to the

state of California to cause cancer.

California No Significant Risk Level:

CAS# 50-00-0: 40 5g/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: Not available

316



Material Safety Data Sheet

Section 1. Product and Company Identification

Product Name **Butyl Alcohol** Product Code B10061

Manufacturer **EMD Chemicals Inc.** Effective Date **2/22/2005**

P.O. Box 70
480 Democrat Road
Gibbstown, NJ 08027
Prior to January 1, 2003 EMD
Chemicals Inc. was EM
Industries, Inc. or EM Science,
Division of EM Industries, Inc.

For More Information Call

856-423-6300 Technical Service
Monday-Friday: 8:00 AM - 5:00 PM

In Case of Emergency Call

800-424-9300 CHEMTREC (USA)
613-996-6666 CANUTEC (Canada)
24 Hours/Day: 7 Days/Week

Synonym **N-1-BUTANOL**
Material Uses **Analytical reagent.**
Chemical **Aliphatic alcohol.**
Family

Section 2. Composition and Information on Ingredients

Component	CAS #	% by Weight
1-Butanol	71-36-3	100

Section 3. Hazards Identification

Physical State and Appearance **Liquid. (Colorless.)**

**Emergency
Overview**

WARNING!
FLAMMABLE LIQUID AND VAPOR.
VAPOR MAY CAUSE FLASH FIRE.
HARMFUL IF INHALED OR SWALLOWED.
CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
CAUSES DAMAGE TO THE FOLLOWING ORGANS: MUCOUS
MEMBRANES, RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS
SYSTEM, EYE, LENS OR CORNEA.

Routes of Entry Inhalation. Ingestion.

Potential Acute Health Effects

Eyes Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching.

Skin Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin.

Inhalation Hazardous in case of inhalation (lung irritant).

Ingestion Hazardous in case of ingestion.

Potential Chronic Health Effects

Carcinogenic Effects This material is not known to cause cancer in animals or humans.

**Additional information See Toxicological Information
(section 11)**

Medical Conditions Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

**Aggravated by
Overexposure:**

Section 4. First Aid Measures

Eye Contact Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Inhalation If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Ingestion If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention immediately.

Section 5. Fire Fighting Measures

Flammability of the Product Product will burn.

Auto-ignition Temperature 342.9°C (649.2°F)

Flash Points Closed cup: 28.9°C (84°F).

Flammable Limits LOWER: 1.4% UPPER: 11.2%

Products of Combustion	These products are carbon oxides (CO, CO ₂).
Fire Hazards in Presence of Various Substances	Flammable in presence of open flames, sparks and static discharge, of heat, of oxidizing materials.
Explosion Hazards in Presence of Various Substances	Risks of explosion of the product in presence of static discharge: Flammable in presence of open flames, sparks and static discharge. Risks of explosion of the product in presence of mechanical impact: No.
Fire Fighting Media and Instructions	SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.
Protective Clothing (Fire)	Be sure to use an approved/certified respirator or equivalent.
Special Remarks on Fire Hazards	Vapor may travel considerable distance to source of ignition and flash back.
Special Remarks on Explosion Hazards	Not available.

Section 6. Accidental Release Measures

Small Spill and Leak	Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.
Large Spill and Leak	Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.
Spill Kit Information	The following EMD Chemicals Inc. SpillSolv ® absorbent is recommended for this product: SX1330 Solvent Treatment Kit

Section 7. Handling and Storage

Handling	Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Do not ingest. Do not get in eyes, on skin, or on clothing.
Storage	Keep container in a cool, well-ventilated area.

Section 8. Exposure Controls/Personal Protection

Engineering Controls	Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective occupational exposure limits. Ensure that eyewash stations and safety showers are proximal to the work-station location.
Personal Protection	Eyes Splash goggles. Body Lab coat.

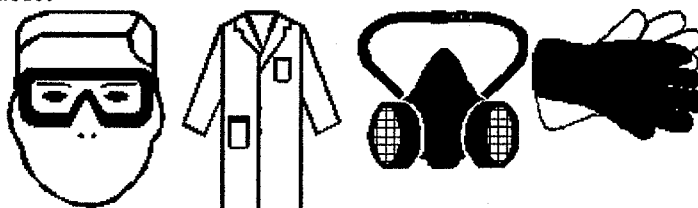
Respiratory Vapor respirator. Be sure to use an approved/certified respirator or equivalent.

Wear appropriate respirator when ventilation is inadequate.

Hands Gloves.

Feet Not applicable.

Protective
Clothing
(Pictograms)



Personal Protection
in Case of a Large
Spill

Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self-contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Product Name

1-Butanol

Exposure Limits

BAUA (Germany, 1997).

Spitzenbegrenzung: 1200 mg/m³

Spitzenbegrenzung: 400 ppm

TWA: 300 mg/m³ 8 hour(s).

TWA: 100 ppm 8 hour(s).

DK-Arbejdstilsynet (Denmark, 1996). Skin

Loftværdi: 150 mg/m³

Loftværdi: 50 ppm

GV: 150 mg/m³ 8 hour(s).

GV: 50 ppm 8 hour(s).

National Authority for Occupational Safety/Health (Ireland, 1999). Skin

STEL: 150 mg/m³ 15 minute(s).

STEL: 50 ppm 15 minute(s).

EH40-OES (United Kingdom (UK), 1997). Skin

STEL: 154 mg/m³ 15 minute(s).

STEL: 50 ppm 15 minute(s).

ACGIH (United States, 1994). Skin

CEIL: 152 mg/m³

CEIL: 50 ppm

NIOSH REL (United States, 1994). Skin

CEIL: 150 mg/m³

CEIL: 50 ppm

OSHA Final Rule (United States, 1989). Skin

CEIL: 150 mg/m³

CEIL: 50 ppm

Section 9. Physical and Chemical Properties

Odor	Alcohol like.
Color	Colorless. Clear.
Physical State and Appearance	Liquid. (Colorless.)
Molecular Weight	74.14 g/mole
Molecular Formula	C ₄ H ₁₀ O

pH	Not available.
Boiling/Condensation Point	117.83°C (244.1°F)
Melting/Freezing Point	-88.83°C (-127.9°F)
Critical Temperature	289.9°C (553.8°F)
Specific Gravity	0.81 (Water = 1)
Vapor Pressure	Not available.
Vapor Density	2.6 (Air = 1)
Odor Threshold	25 ppm
Evaporation Rate	0.44 compared to(n-BUTYL ACETATE=1)
LogKow	Not available.
Solubility	Partially soluble in water.

Section 10. Stability and Reactivity

Stability and Reactivity	The product is stable.
Conditions of Instability	Not available.
Incompatibility with Various Substances	Reactive with metals, acids, alkalis.
Rem/Incompatibility Hazardous	Not available. carbon oxides (CO, CO2)
Decomposition Products	
Hazardous Polymerization	Will not occur.

Section 11. Toxicological Information

	Butyl Alcohol	EO1400000
RTECS Number:		
Toxicity	Acute oral toxicity (LD50): 790 mg/kg [Rat]. Acute dermal toxicity (LD50): 3400 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 8000 ppm 4 hour(s) [Rat].	
Chronic Effects on Humans	Not available.	
Acute Effects on Humans	Hazardous in case of eye contact (irritant). Inflammation of the eye is characterized by redness, watering, and itching. Hazardous in case of skin contact (irritant). Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering. Non-permeator by skin. Hazardous in case of inhalation (lung irritant). Hazardous in case of ingestion.	
Synergetic Products Toxicologically)	Not available.	

Irritancy	Draize Test (Rabbit): Skin: 20mg/24h. Reaction: Moderate. Eye: 2 mg/24H Severe
Sensitization	Not available.
Carcinogenic Effects	This material is not known to cause cancer in animals or humans.
Toxicity to Reproductive System	Tests on laboratory animals for reproductive effects are cited in Registry of Toxic Effects on Chemical Substances (RTECS).
Teratogenic Effects	Not available.
Mutagenic Effects	Tests on laboratory animals for mutagenic effects are cited in Registry of Toxic Effects of Chemical Substances (RTECS).

Section 12. Ecological Information

Ecotoxicity	Not available.
BOD5 and COD	Not available.
Toxicity of the Products of Biodegradation	The products of degradation are less toxic than the product itself.

Section 13. Disposal Considerations

EPA Waste Number	U031 D001
Treatment	Incineration, fuels blending or recycle. Contact your local permitted waste disposal site (TSD) for permissible treatment sites. Always contact a permitted waste disposal (TSD) to assure compliance with all current local, state, and Federal Regulations.

Section 14. Transport Information

DOT Classification	Proper Shipping Name: BUTANOL Hazard Class: 3 UN number: UN1120 Packing Group: III RQ: 5000 lbs. (2268 kg)
TDG Classification	Not available.
IMO/IMDG Classification	Not available.
ICAO/IATA Classification	Not available.

Section 15. Regulatory Information

U.S. Federal Regulations	TSCA 4(a) final test rules: 1-Butanol TSCA 8(b) inventory: 1-Butanol TSCA 12(b) one time export: 1-Butanol
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Changed Since Last +
Revision

Notice to Reader

The statements contained herein are based upon technical data that EMD Chemicals Inc. believes to be reliable, are offered for information purposes only and as a guide to the appropriate precautionary and emergency handling of the material by a properly trained person having the necessary technical skills. Users should consider these data only as a supplement to other information gathered by them and must make independent determinations of suitability and completeness of information from all sources to assure proper use, storage and disposal of these materials and the safety and health of employees and customers and the protection of the environment. EMD CHEMICALS INC. MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, WITH RESPECT TO THE INFORMATION HEREIN OR THE PRODUCT TO WHICH THE INFORMATION REFERS.

BIODIESEL
INDUSTRIES

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT IDENTIFICATION

Common Name: Biodiesel
Chemical Name: Fatty Acid Methyl Ester
Formula: C14-C24 Methyl Esters
Chemical Family: CAS No. 67784-80-9

SECTION 2 - INGREDIENTS AND HAZARDOUS CLASSIFICATION

Typical Composition:

Alkyl C14-C24 Methyl Esters	OSHA PEL none	ACGH/TLV none	Percent 99
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This product contains no hazardous materials.
SARA Title III, Section 313: Not Listed

SECTION 3 - PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point: >400° F
Vapor Pressure (mm Hg): <5 mm Hg @ 72° F
Evaporation Rate: less than .005 versus (Butyl Acetate = 1)
Solubility in Water: insoluble
Appearance and Odor: light to dark yellow clear liquid / light musty odor

SECTION 4 - FIRE AND EXPLOSION HAZARD DATA

Flash Point (method used): 321° F PMCC
Flammable Limits: N/A
HMIS Rating: Health: 0 Fire: 1 Reactivity: 0
Extinguishing Media: Use water spray, dry chemical, foam or carbon dioxide.
Special Fire Fighting Procedures: Treat as oil fire.
Unusual Fire and Explosion hazards: Rags soaked with any solvent present a fire hazard and should be stored in an approved UL listed covered container.

- PAGE 1 OF 2 -

SECTION 5 - REACTIVITY DATA

Reactivity: Stable
Conditions to Avoid: Non Known
Incompatibility (materials to avoid): Strong oxidizing agents
Hazardous Decomposition or By-products: Carbon monoxide, carbon dioxide
Hazardous Polymerization: Will not occur

SECTION 6 - HEALTH HAZARD DATA

Emergency First Aid Procedures:
Ingestion: Rinse mouth with water, contact physician
Eyes: Rinse with water 15 minutes, contact physician
Skin: Rinse with soap and water

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in case material is released or spilled:
Avoid uncontrolled releases. Contain spilled material. Transfer to secure containers. Use absorbent material if necessary.
Disposal: Dispose of according to Federal, state and/or local regulations
Precautions to be Taken in Handling and Storing: Avoid open flames
Other Precautions: None

SECTION 8 - CONTROL MEASURES

Respiratory Protection: None required
Ventilation: mechanical
Protective Gloves: Rubber
Eye Protection: Safety glasses / splash goggles
Other Protective Clothing or Equipment: None required

SECTION 9 - TRANSPORTATION

DOT Code: N/A
DOT Shipping Name: Fatty acid esters
Other Regulatory: Listed in TSCA inventory

The information provided is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability, or suitability for an intended use, or any other warranty, expressed or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

BIODIESEL INDUSTRIES, INC.
111 SAGUARO LANE, MARATHON, FL 33050 • 305-743-3942 • FAX 305-743-3943
ONLINE AT [HTTP://WWW.PIPELINE.TO/BIODIESEL](http://www.pipeline.to/biodiesel) • EMAIL RTEALL@AOL.COM

- PAGE 2 OF 2 -

Documents

Document Title Category Document Date Document Type Action Type

1. MSDS Sheet for Biodiesel

MATERIAL SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Manufacturer: AccuStandard, Inc.
125 Market Street
New Haven, CT 06513

Date MSDS Printed: 6/20/2007
Preparation Date: 2/10/2006
Information Phone Number: 203-786-5290
Emergency Phone Number: 203-786-5290
Hours: Mon. to Fri. 8am-5pm

Catalog Number: PS-151C-04
Product Name: 1,3-Butanediol
Synonyms: 1,3-Butanediol; Butane-1,3-diol; Butylene glycol; 1,3-Dihydroxybutane; Methyltrimethylene glycol
Formula: $C_4H_{10}O_2$ Molecular Weight: 90.12

SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

Component(s)	(I)	CAS #	Appr. %	ACGIH-TLV (mg/m3)			OSHA-PEL (mg/m3)		
				TWA	STEL	skin	TWA	STEL	skin
1,3-Butanediol		107-88-0	100						

SECTION 3 - HAZARDS IDENTIFICATION

Symptoms of Exposure:

May be irritating to eyes, skin, mucous membranes and upper respiratory system.

To the best of our knowledge the chemical, physical and toxicological properties of the component ingredients have not been thoroughly investigated.

Potential Health Effects:

May be harmful if inhaled, absorbed through the skin, or swallowed.

Routes of Entry:

Inhalation, ingestion or skin contact.

Catalog Number: PS-151C-04
Alteration of any information contained herein without written permission from AccuStandard strictly prohibited.
Preparation Date: 2/10/2006

For full page MSDS please visit www.accustandard.com

Carcinogenicity:

This product is or contains a component that is not listed (ACGIH, IARC, NTP, OSHA) as a cancer causing agent.

SECTION 4 - FIRST AID MEASURES

Emergency First Aid:

Get medical assistance for all cases of overexposure.

Skin contact: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash clothing before reuse.

Eye contact: Immediately flush with plenty of water. After initial flushing, remove and contact lenses and continue flushing for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

Ingestion: Drink water and induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention immediately.

SECTION 5 - FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: 226.4 °F (108 °C)

Flammable Limits LEL (%): 1.9

Flammable Limits UEL (%): N/A

Autoignition Temperature: 394 °C

During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media:

Use alcohol foam, carbon dioxide, dry chemical, or water spray when fighting fires involving this material.

Fire Fighting Procedures:

As in any fire, wear self-contained breathing apparatus pressure demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill Response:

Wear a self-contained breathing apparatus and appropriate Personal protection. Prevent contact with skin or eyes. Ventilate area. Stop leak if you can do so without risk. Absorb on sand or vermiculite, take up and containerize for proper disposal. Flush spill area with water. Comply with Federal, State, and local regulations.

SECTION 7 - HANDLING AND STORAGE

Store in a tightly closed container.

Store in a cool area away from ignition sources and oxidizers.

Material is hygroscopic.

Do not breathe vapor.

Do not get in eyes, on skin or clothing.

Avoid prolonged or repeated exposure.

This product should only be used by persons trained in the safe handling of hazardous chemicals.

Catalog Number: PS-151C-04
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Preparation Date: 2/10/2006

For full page MSDS please visit www.accustandard.com

EPAH0011000453

SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering Controls and Personal Protection Equipment (PPE):

Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded (see TLV/PEL), a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions (see your safety equipment supplier). Engineering and/or administrative controls should be implemented to reduce exposure.

Material should be handled or transferred in an approved fume hood or with adequate ventilation.

Compatible chemical-resistant protective gloves must be worn to prevent skin contact.

Safety glasses with side shields must be worn at all times.

General Hygiene Considerations:

Wash thoroughly after handling. Do not take internally. Eye wash and safety equipment should be readily available.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Liquid
Odor: N/A
pH: 6.0 - 7.0 (20 °C)
Vapor Pressure: 0.06 mmHg (20 °C)
Vapor Density (Air = 1): 3.1 g/l
Boiling Point: 204 - 207 °C
Melting Point: N/A
Solubility in Water (%): N/A
Specific Gravity (H₂O = 1): 1.004 g/cm³
Flash Point: 226.4 °F (108 °C) (cc)
Explosion Limits (%): 1.9 to N/A
Autoignition Temperature: 394 °C
Percent Volatile: N/A
Evaporation Rate (BuAc = 1): N/A
Molecular Weight: 90.12
Molecular Formula: C₆H₁₀O₂

SECTION 10 - STABILITY AND REACTIVITY

Stability: Stable
Conditions To Avoid: Moisture
Materials To Avoid: Oxidizers

Acid chlorides; Acid anhydrides; Chloroformates; Reducing agents

Hazardous Decomposition: Carbon oxides

Hazardous Polymerization:

Catalog Number:
PS-151C-04

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Page 3
Preparation Date: 2/10/2006

For full page MSDS please visit www.accustandard.com

SECTION 11 - TOXICOLOGICAL INFORMATION

See section 3 for specific toxicological information for the ingredients of this product.

SECTION 12 - ECOLOGICAL INFORMATION

By complying with sections 6 and 7 there will be no release to the environment.

SECTION 13 - DISPOSAL CONSIDERATIONS

Recycle or incinerate at any EPA approved facility or dispose in compliance with Federal, State and local regulations. Empty containers must be triple-rinsed prior to disposal.

SECTION 14 - TRANSPORT INFORMATION

DOT UN Number: NR Shipping Class: NR Packing Group: NR IRRITANT

SECTION 15 - REGULATORY INFORMATION

In addition to Federal and state regulations, local regulations may apply. Check with your local regulatory authorities.

SECTION 16 - OTHER INFORMATION

This document has been designed to meet the requirements of OSHA, ANSI and CHIP's regulations.

The statements contained herein are offered for informational purposes only and are based on technical data that we believe to be accurate. It is intended for use only by persons having the necessary technical skill and at their own discretion and risk. Since conditions and manner of use are outside our control, we make
NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS OR OTHERWISE.

Legend : N/A = Not Available ND = Not Determined NR = Not regulated
*** End of Document ***

Catalog Number:
PS-151C-04

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written permission from AccuStandard strictly prohibited.

Page 4
Preparation Date: 2/10/2006

For full page MSDS please visit www.accustandard.com

Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Product:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572

Manufacturer name and address:

Celanese Ltd.
 1601 W. LBJ Freeway
 P.O. Box 819005
 Dallas, TX 75381-9005
 United States
 Phone: 972 443 4000
 Internet: www.celanesechemicals.us

Transportation emergency phone numbers:

In USA, call 800 424 9300
 Outside USA, call 703 527 3887, collect calls accepted

2. Composition/Information on Ingredients

Component	CAS Number	Percent %	OSHA hazard category:
ACETIC ACID	64-19-7	20 - 40%	Hazardous
ETHYLENE GLYCOL DIACETATE	111-55-7	10 - 20%	Hazardous
ACETOXY ACETIC ACID	13831-30-6	20 - 40%	Hazardous
Vinyl Acetoxy Acetate	159335-88-3	1 - 10	Hazardous
Cis & trans Isomers of Diacetoxy Ethylene	17366-23-9	1 - 10	Hazardous
ETHYLIDENE DIACETATE	542-10-9	1 - 5%	Hazardous

3. Hazards Identification

Emergency Overview:

DANGER!

- Causes skin, eye and digestive tract burns.
- Causes respiratory tract irritation.
- Flammable liquid and vapor.

Transportation emergency:	800 424 9300 703 527 3887	CHEMTREC, 24 hrs/day Outside USA, collect calls accepted, 24 hrs/day
Product information:	800 836 5235	

1 of 14

09/19/2008 14:52 FAX 9792414228

Celanese CR7

003/015



Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2008

Product Description

Appearance: Dark brown liquid.
Odor: Strong, acrid, vinegar-like odor.

Potential health effects

Routes of exposure: Skin, eyes, inhalation, ingestion.

Immediate effects:

Skin: Causes skin burns. May cause allergic skin reaction. May be harmful if absorbed through skin. Symptoms of exposure may include: Redness or discoloration, swelling, itching, burning or blistering of skin. Central nervous system depression with headache, stupor, uncoordinated or strange behavior or unconsciousness.

Eyes: Exposure to vapors Causes eye irritation. Exposure to liquid Causes eye burns. Symptoms of exposure may include: Eye irritation, burning sensation, pain, watering, and/or change of vision.

09/19/2008 14:51 FAX 9792414228

Celanese CR7_

002/015



Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2008

Medical conditions which may be aggravated by exposure: Significant exposure to this chemical may adversely affect people with acute or chronic disease of the:
Respiratory Tract
Skin
Kidneys
Eyes
Central nervous system

For further information, see: Section 4 - First Aid Measures
Section 5 - Fire Fighting Measures
Section 6 - Accidental Release Measures
Section 8 - Exposure Controls/Personal Protection
Section 9 - Physical and Chemical Properties
Section 10 - Stability and Reactivity

4. First Aid Measures

Skin: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Destroy contaminated shoes.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion: DO NOT induce vomiting. Get medical attention immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.

Note to physician: Observe for latent pulmonary edema.

5. Fire Fighting Measures

NFPA: Health: 3 Flammability: 2 Reactivity: 0

Flammable properties

Flash point (test method): 115 F - 150 F (46.1 - 65.6 C) (Closed cup)

Flammable limits in air, % by volume:

Products of combustion: Carbon Monoxide.

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day

Product information: 800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

Extinguishing Media: Use CO₂ or dry chemical for small fires. Use aqueous film forming foam for large fires.

Fire Fighting Instructions: Water spray should be used to cool fire-exposed structures and vessels. Water may be used to blanket fire. Water must be gently applied to the liquid surface, preferably with a fine spray or fog nozzle. Keep personnel removed from and upwind of fire. If potential for exposure to vapors or products of combustion exists, wear full fire fighting turnout gear and NIOSH approved self-contained breathing apparatus. Oxidizing chemicals may accelerate the burning rate in a fire situation.

Fire Fighting Environmental Concerns: Water run-off and vapor cloud may be corrosive. Dike and collect water used to fight fire for neutralization before release. Water streams should not be directed to the liquid, as this will cause the liquid to boil and generate more vapor. Thoroughly decontaminate bunker gear and other fire-fighting equipment before re-use.

Accidental Release Measures

Spill or Leak Instructions

Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind; keep out of low areas. Isolate for 800 meters or 0.5 miles in all directions if tank, rail car, or tank truck is involved in fire. Evacuate downwind areas as conditions warrant to prevent exposure and to allow vapors or fumes to dissipate. Spills may expose downwind areas to toxic or flammable concentrations over considerable distances in some cases. Eliminate ignition sources. See Section 8 for appropriate personal protective equipment. Contain spill with dikes of soil or nonflammable absorbent to minimize contaminated area. If fire potential exists, blanket spill with alcohol type aqueous film-forming foam or use water fog stream to disperse vapors. Avoid run-off into storm sewers and ditches leading to waterways. If required, notify state and local authorities. Place leaking containers in well-ventilated area. Neutralize with lime or sodium bicarbonate. Clean up small spills by using a nonflammable absorbent or flushing sparingly with water. Contain larger spills with nonflammable diking or absorbent. Clean up by vacuuming or sweeping.

Within the United States, call the National Response Center (800-424-8802) and appropriate state and local authorities if the quantity released over 24 hours is equal to or greater than the reportable quantity listed below:
20,000 lbs. of the material as is, based on a Reportable Quantity of 5,000 lbs. of acetic acid.

Handling and Storage

Transportation emergency: 800 424 8300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day

Product information: 800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

Handling: Use with adequate ventilation. Keep containers closed when not in use. Always open containers slowly to allow any excess pressure to vent. Avoid breathing vapor. Avoid contact with eyes, skin or clothing. Wash thoroughly with soap and water after handling. Decontaminate soiled clothing thoroughly before re-use. Destroy contaminated leather clothing.

This product may generate a static charge. Ground/bond equipment when transferring material to prevent static accumulation. Electrical equipment and circuits in all storage and handling must conform to requirements of National Electric Code (Article 500 and 501) for hazardous location.

Storage: Do not store with incompatible materials. See Section 10. Stability and Reactivity.

Exposure Controls/Personal Protection

Engineering Controls: General or dilution ventilation is frequently insufficient as the sole means of controlling employee exposure. Local ventilation is usually preferred.

Protective Equipment A safety shower and eyebath should be readily available.

Skin protection: Wear impervious clothing and gloves to prevent contact. Butyl rubber is recommended. Other protective material may be used, depending on the situation, if adequate degradation and permeation data is available. If other chemicals are used in conjunction with this chemical, material selection should be based on protection for all chemicals present.

Eye/face protection: Wear chemical goggles when there is a reasonable chance of eye contact. In addition to goggles, wear a face shield if there is a reasonable chance for splash to the face.

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product information: 800 835 5235

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Product name: Bay City Mixed Vinyl Esters
 MSDS number: 80572
 Material number: 80572
 Published date: 07/29/2005

Respiratory protection:

Based on workplace contaminant level and working limits of the respirator, use a respirator approved by NIOSH. The following is the minimum recommended equipment for an occupational exposure level. To estimate an occupational exposure level see Section 3, Section 8 and Section 11.

For concentrations > 1 and < 10 times the occupational exposure level: Use air-purifying respirator with full facepiece and organic vapor cartridge(s) or air-purifying full facepiece respirator with an organic vapor canister or a full facepiece powered air-purifying respirator fitted with organic vapor cartridge(s). The air purifying element must have an end-of-service-life-indicator, or a documented change-out schedule must be established. Otherwise, use supplied air.

For concentrations more than 10 times the occupational exposure level and less than the lower of either 100 times the occupational exposure level or the IDLH: Use Type C full facepiece supplied-air respirator operated in positive-pressure or continuous-flow mode.

For concentrations > 100 times the occupational exposure level or greater than the IDLH level or unknown concentrations (such as in emergencies): Use self-contained breathing apparatus with full facepiece in positive-pressure mode or Type C positive-pressure full facepiece supplied-air respirator with an auxiliary positive-pressure self-contained breathing apparatus escape system.

For escape: Use self-contained breathing apparatus with full facepiece or any respirator specifically approved for escape.

Exposure guidelines

Component	CAS Number	Percent %	ACGIH TWA	ACGIH STEL	ACGIH CEILING	OSHA TWA	OSHA STEL	OSHA CEILING	Celanese WEL*	Mexico TWA	Mexico STEL	Mexico CEILING
ACETIC ACID	64-19-7	20 - 40%	10 ppm	15 ppm	-	10 ppm	-	-	-	10 ppm	15 ppm	-
ETHYLENE GLYCOL DIACETATE	111-88-7	10 - 20%	-	-	-	-	-	-	-	-	-	-
ACETOXY ACETIC ACID	13831-30-6	20 - 40%	-	-	-	-	-	-	-	-	-	-
Vinyl Acetoxy Acetate	158338-88-3	1 - 10	-	-	-	-	-	-	-	-	-	-
Cis & trans isomers of Diacetoxy Ethylene	17356-23-9	1 - 10	-	-	-	-	-	-	-	-	-	-
ETHYLIDENE DIACETATE	842-10-9	1 - 5%	-	-	-	-	-	-	-	-	-	-

Component	CAS Number	Percent %	1980 NIOSH IDLH (Recognized by OSHA)	1984 NIOSH IDLH
ACETIC ACID	64-19-7	20 - 40%	1,000 PPM	50 ppm
ETHYLENE GLYCOL DIACETATE	111-88-7	10 - 20%	-	-
ACETOXY ACETIC ACID	13831-30-6	20 - 40%	-	-
Vinyl Acetoxy Acetate	158338-88-3	1 - 10	-	-
Cis & trans isomers of Diacetoxy Ethylene	17356-23-9	1 - 10	-	-
ETHYLIDENE DIACETATE	842-10-9	1 - 5%	-	-

Transportation emergency:

800 424 9300

703 527 3887

CHEMTREC, 24 hrs/day

Outside USA, collect calls accepted, 24 hrs/day

Product information:

800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005
Comments:	Celanese has adopted the ACGIH TLVs

Physical and Chemical Properties

Appearance:	Dark brown liquid.
Odor:	Strong, acid, vinegar-like odor.
Vapor Pressure:	10 mm Hg @ 20 deg.C
Boiling Point (760 mmHgA):	138 C @ 360 mm Hg
Solubility:	Slightly soluble to insoluble
Density:	1.14

Stability and Reactivity

Stability:	Stable.
Conditions to Avoid:	Avoid heat, flames, sparks, and other sources of ignition.
Incompatibility:	Keep away from caustic soda, lime and strong alkalis, oxidizing agents such as nitric acid, peroxides, amines, sulfuric acid, perchloric acid or chromium trioxide.
Hazardous Combustion or Decomposition Products:	Thermal decomposition products may include oxides of carbon.
Hazardous Polymerization:	Hazardous polymerization will not occur.

Toxicological Information

Component Toxicological Information

Component	ACETIC ACID
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Transportation emergency:	800 424 9300 703 527 3887	CHEMTREC, 24 hrs/day Outside USA, collect calls accepted, 24 hrs/day
Product Information:	800 835 6236	

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

Acute Exposure:

Oral LD50: 3.2-5.6 g/kg (rats); slightly toxic to animals.

Inhalation LC50: > 16000 ppm (rats, 4 hours); practically nontoxic to animals.

Skin: Corrosive to rabbit skin. Moderately toxic to animals (LD50, rabbits: 1.1 g/kg).

Eyes: Corrosive to rabbit eyes.

Mutagenicity: Mixed results *in vitro* (negative in the Ames and Chinese hamster ovary assay; positive in human lymphocytes for SCEs and in some DNA damage assays). The positive results are thought to be due to artifacts caused by acidification of the culture media.

Carcinogenicity: No studies conducted according to accepted scientific principles.

Reproductive/Developmental Effects: No reproductive effects were found after oral administration of 1.6 g apple cider vinegar per day (5% acetic acid) to pregnant rabbits, rats or mice.

Repeated Exposure: Acetic acid was administered to rats in the drinking water at concentrations up to 0.5% (up to 390 mg/kg) for 2 to 4 months. Reduced food intake and growth were noted in the 390 mg/kg group but no effects were noted in concentrations of 8 to 195 mg/kg. Administration of 0.5 ml of 3% acetic acid to rats (approx. 60 mg/kg/treatment) in water by stomach tube 3 times/week for 8 months induced cell proliferation of the gullet and forestomach.

Component	ETHYLENE GLYCOL DIACETATE
-----------	---------------------------

Transportation emergency:800 424 9300
703 527 3887CHEMTREC, 24 hrs/day
Outside USA, collect calls accepted, 24 hrs/day**Product Information:**

800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

Acute Exposure:

Oral LD50: 6.85 g/kg (rats), 4.94 g/kg (Guinea pig); considered to be nontoxic to rodents.

Inhalation LC50: ND

Skin LD50: 9.6 g/kg (rabbits); considered to be nontoxic to rabbits.

Skin Irritation: ND

Eye Irritation: mild (rabbit)

Repeated Exposure: rats treated with 1% ethylene glycol diacetate in the drinking water for 11 months exhibited reduced body weight gain and approximately 50% mortality. These adverse effects are believed to be due to deposition of calcium oxalate crystals in the kidneys.

Mutagenicity: ND

Carcinogenicity: ND

Reproductive/Developmental Effects: ND

Component	ETHYLIDENE DIACETATE
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Transportation emergency:	800 424 9300	CHEMTREC, 24 hrs/day
	703 527 3887	Outside USA, collect calls accepted, 24 hrs/day
Product Information:	800 835 5235	

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Product name: Bay City Mixed Vinyl Esters
 MSDS number: 80572
 Material number: 80572
 Published date: 07/29/2005

Acute Exposure:

Oral LD50: 3.2 g/kg (rats/male) 2.54 g/kg (rats/female); considered to be nontoxic to rodents.

Inhalation LC50: ND

Skin LD50: > 20 g/kg (guinea pig); considered to be nontoxic to laboratory animals

Skin Irritation: slightly irritating (rabbit)

Eye Irritation: slightly irritating (rabbit)

Repeated Exposure: Rats were treated by oral gavage with up to 1000 mg/kg/day for 14 days. No adverse effects were reported.

Mutagenicity: ND

Carcinogenicity: ND

Reproductive/Developmental Effects: ND

12. Ecological Information

Component Ecological Information

Component	ACETIC ACID
	<p>Ecotoxicity: The aquatic toxicity and biodegradation of acetic acid are expected to be influenced by its potential to lower pH.</p> <p>Acetic acid exhibits slight acute toxicity to aquatic species. The 24-, 48- and 96-hour LC50 values for the fathead minnow are 106-122, 92-106 and 79-88 ppm, respectively. The 48-hour LC50 values for rainbow trout and carp are 105 and 49 ppm, respectively. The 96-hour LC50 for mosquitofish is 251 ppm. The 24-hour EC50 for the water flea (daphnid) is 6000 ppm. Toxicity thresholds for green algae (<i>Scenedesmus quadricauda</i>), blue-green algae (<i>Anacystis aeruginosa</i>), and euglenoid (<i>Entosiphon sulcatum</i>) are 4000, 90 and 78 ppm, respectively.</p>

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
 703 627 3887 Outside USA, collect calls accepted, 24 hrs/day
 Product information: 800 835 5235

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Product name: Bay City Mixed Vinyl Esters
 MSDS number: 80572
 Material number: 80572
 Published date: 07/29/2006

Environmental Fate:

Degradation: Acetic acid will biodegrade readily if released to water (e.g., 5-Day BOD's 83-81%) or soil. The atmospheric photochemical degradation half-life is estimated to be 26.7 days.

Bioaccumulation: The log n-octanol water partition coefficient for acetic acid is -0.17. This suggests that acetic acid has low potential to bioaccumulate.

Component	ETHYLENE GLYCOL DIACETATE
-----------	---------------------------

Ecotoxicity: The LC50 value for the bluegill sunfish is 90 ppm/96 hr in a static fresh water study. The LC50 value for the tidewater silverside is 78 ppm/96 hr in a static synthetic seawater assay.

Environmental Fate: Vapor-phase ethylene glycol diacetate is degraded in the atmosphere by reaction with photochemically produced hydroxyl radical with an estimated half-life of approximately 4 days. The estimated hydrolysis half-life is 15 days at pH 8 and 152 days at pH 7. Ethylene glycol diacetate is essentially non-volatile from water and is expected to have a high mobility in soil.

Degradation: Ethylene glycol diacetate is expected to be readily biodegradable in soil and water based upon an O.E.C.D. Screening Test (die-away) using sewage as an inoculum.

Bioaccumulation: An estimated Bioconcentration Factor of 1.2 indicates that ethylene glycol diacetate will not bioconcentrate in aquatic organisms.

Dispose of spilled material in accordance with state and local regulations for hazardous waste. Recommended methods are incineration or biological treatment at a federally or state-permitted disposal facility. Note that this information applies to the material as manufactured; processing, use, or contamination may make this information inappropriate, inaccurate, or incomplete.

Note that this handling and disposal information may also apply to empty containers, liners and rinsate. State or local regulations or restrictions are complex and may differ from federal regulations. This information is intended as an aid to proper handling and disposal; the final responsibility for handling and disposal is with the owner of the waste. See Section 9 - Physical and Chemical Properties.

EPA Hazardous Waste Code(s): D001, D002, D007

14. Transportation Information

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
 703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
 Product information: 800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

US Department of Transportation:

UN/NA Number:	UN 2924
Shipping name:	Flammable liquids, corrosive, n.o.s. (acetic acid)
Hazard class:	3
Subsidiary hazard:	8
Packing Group:	III
DOT Reportable Quantity (RQ):	5000 lbs./ 2270 kg
Emergency Response Guide:	132

ICAO/IATA:

IATA UN Number:	UN 2924
Proper Shipping Name:	Flammable liquids, corrosives, n.o.s. (acetic acid)
Hazard Classification:	3
Subsidiary Hazard:	8
Packing group:	III
Label:	(Flammable Liquid) Corrosive

IMDG:

International Marine UN Number:	UN 2924
Proper Shipping Name:	Flammable liquids, corrosive, n.o.s. (acetic acid)
Hazard Class:	3
Subsidiary Hazard:	8
Packing Group:	III
Flash point (test method):	115 F - 150 F (46.1 - 65.6 C) (Closed cup)

Transport Canada**U.S. STATE REGULATIONS**

Chemicals associated with the product which are subject to the state right-to-know regulations are listed along with the applicable state(s):

ACETIC ACID 64-19-7

Pennsylvania	Listed
New York	Listed
New Jersey	Listed
Illinois	Listed
Massachusetts	Listed
Rhode Island	Listed

Transportation emergency:	800 424 9300	CHEMTREC, 24 hrs/day
	703 527 3887	Outside USA, collect calls accepted, 24 hrs/day
Product Information:	800 835 5235	

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

ETHYLENE GLYCOL DIACETATE 111-55-7
Pennsylvania Listed

U.S. FEDERAL REGULATIONS

TSCA Inventory: We certify that all components are either on the TSCA inventory or qualify for an exemption.

Environmental Regulations:

ACETIC ACID 64-19-7
CERCLA Hazardous Substance Listed

SARA 311:

Acute health:	Yes
Chronic health:	No
Fire:	Yes
Sudden release of pressure:	No
Reactive:	No

INTERNATIONAL REGULATIONS

International Chemical Inventory

Listed on the chemical inventories of the following countries or qualifies for an exemption:

Prepared by: Product Stewardship Department
Celanese Ltd.

Hazard ratings This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

NFPA: Health: 3 Flammability: 2 Reactivity: 0

HMIS: Health: 3 Flammability: 2 Reactivity: 0

Transportation emergency: 800 424 9300 CHEMTREC, 24 hrs/day
703 527 3887 Outside USA, collect calls accepted, 24 hrs/day
Product Information: 800 835 5235

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Product name:	Bay City Mixed Vinyl Esters
MSDS number:	80572
Material number:	80572
Published date:	07/29/2005

Revisions: The following sections have been revised since the last issue of this MSDS.

Footer: Product Information Number

For industrial use only. The information contained herein is accurate to the best of our knowledge. We do not suggest or guarantee that any hazards listed herein are the only ones which exist. Celanese makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or in combination with other substances. Effects can be aggravated by other materials and/or this material may aggravate or add to the effects of other materials. This material may be released from gas, liquid, or solid materials made directly or indirectly from it. User has the sole responsibility to determine the suitability of the materials for any use and the manner of use contemplated. User must meet all applicable safety and health standards. Material safety data sheets are provided on the Internet by Celanese as a service to its customers. Possession of an Internet MSDS does not indicate that the possessor of the MSDS was a purchaser or user of the subject product.

Transportation emergency:	800 424 9300 703 527 3887	CHEMTREC, 24 hrs/day Outside USA, collect calls accepted, 24 hrs/day
Product information:	800 835 5235	

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Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

1 Identification of substance:**Product details:****Product name:** Barium hydroxide**Stock number:** 14499**Manufacturer/Supplier:**

Alfa Aesar, A Johnson Matthey Company

Johnson Matthey Catalog Company, Inc.

30 Bond Street

Ward Hill, MA 01835-8099

Emergency Phone: (978) 521-6300

CHEMTREC: (800) 424-9300

Web Site: www.alfa.com**Information Department:** Health, Safety and Environmental Department**Emergency information:**

During normal hours the Health, Safety and Environmental Department.

After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:**Chemical characterization:****Description:** (CAS#)

Barium hydroxide, octahydrate (CAS# 12230-71-6): 100%

Identification number(s):**EINECS Number:** 241-234-5**EU Number:** 056-002-00-7**3 Hazards identification****Hazard description:**

Xn Harmful

Information pertaining to particular dangers for man and environment

R 20/22 Harmful by inhalation and if swallowed.

Classification system**HMIS ratings (scale 0-4)****(Hazardous Materials Identification System)**

HEALTH	2
FIRE	0
REACTIVITY	1

Health (acute effects) = 2

Flammability = 0

Reactivity = 1

4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

(Contd. on page 2)

USA

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 1)

After swallowing Seek immediate medical advice.**5 Fire fighting measures****Suitable extinguishing agents**

Product is not flammable. Use fire fighting measures that suit the surrounding fire.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Barium oxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Dispose contaminated material as waste according to item 13.

Ensure adequate ventilation.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Handle under dry protective gas.

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Information about protection against explosions and fires:

The product is not flammable

Storage**Requirements to be met by storerooms and receptacles:**

No special requirements.

Information about storage in one common storage facility:

Store away from air.

Do not store together with acids.

Further information about storage conditions:

Store under dry inert gas.

Keep container tightly sealed.

Store in cool, dry conditions in well sealed containers.

This product is air sensitive.

USA

(Contd. on page 3)

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 2)

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Barium, and soluble compounds, as Ba

mg/m3

ACGIH TLV	0.5; Not classified as a human carcinogen
Austria MAK	0.5
Belgium TWA	0.5
Denmark TWA	0.5
Finland TWA	0.5
Germany MAK	0.5 (total dust)
Hungary	0.5-STEL
Ireland TWA	0.5
Korea TLV	0.5
Netherlands MAC-TGG	0.5
Norway TWA	0.5
Poland TWA	0.5; 1.5-STEL
Sweden TWA	0.5
Switzerland MAK-W	0.5
United Kingdom LTEL	0.5
USA PEL	0.5

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Check protective gloves prior to each use for their proper condition.

Impervious gloves

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses

Body protection: Protective work clothing.

9 Physical and chemical properties:**General Information**

Form:	Crystalline
Color:	White
Odor:	Odorless

Change in condition

Melting point/Melting range:	78°C (172°F)
Boiling point/Boiling range:	Not determined
Sublimation temperature / start:	Not determined

(Contd. on page 4)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 3)

Flash point:	Not applicable
Ignition temperature:	Not determined
Decomposition temperature:	Not determined
Danger of explosion:	Product does not present an explosion hazard.
Explosion limits:	
Lower:	Not determined
Upper:	Not determined
Vapor pressure:	Not determined
Density at 20°C (68°F):	2.18 g/cm ³
Solubility in / Miscibility with Water:	Soluble

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided:

Air

Acids

Dangerous reactions No dangerous reactions known

Dangerous products of decomposition: Barium oxide

11 Toxicological information**Acute toxicity:****Primary irritant effect:**

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Subacute to chronic toxicity:

Barium compounds may cause severe gastroenteritis, including abdominal pain, vomiting and diarrhea, tremors, faintness, paralysis of the arms and legs, and slow or irregular heartbeat. Severe cases may produce collapse and death due to respiratory failure. Soluble barium compounds are more likely to cause these effects than insoluble compounds.

Inhalation of fumes may cause sore throat, coughing, labored breathing, and irritation of the respiratory tract as well as the above symptoms.

Subacute to chronic toxicity:

Corrosive materials are acutely destructive to the respiratory tract, eyes, skin and digestive tract. Eye contact may result in permanent damage and complete vision loss. Inhalation may result in respiratory effects such as inflammation, edema, and chemical pneumonitis. May cause coughing, wheezing, laryngitis, shortness of breath, headache, nausea and vomiting. Ingestion may cause damage to the mouth, throat and esophagus.

May cause skin burns or irritation depending on the severity of the exposure.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

(Contd. on page 5)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 4)

EPA-NL: Not likely to be carcinogenic to humans.

EPA-D: Not classifiable as to human carcinogenicity: inadequate human and animal evidence of carcinogenicity or no data are available.

ACGIH A4: Not classifiable as a human carcinogen: Inadequate data on which to classify the agent in terms of its carcinogenicity in humans and/or animals.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.**14 Transport information****DOT regulations:****Hazard class:**

8

Identification number:

UN3262

Packing group:

III

Proper shipping name (technical name):CORROSIVE SOLID, BASIC, INORGANIC,
N.O.S. (Barium hydroxide)**Label**

8

Land transport ADR/RID (cross-border)**ADR/RID class:**

8 (C6) Corrosive substances

Danger code (Kemler):

80

UN-Number:

3262

Packaging group:

III

(Contd. on page 6)

USA

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 5)

Description of goods: 3262 CORROSIVE SOLID, BASIC, INORGANIC,
N.O.S. (Barium hydroxide)

Maritime transport IMDG:



IMDG Class: 8
UN Number: 3262
Label: 8
Packaging group: III
Proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC,
N.O.S. (Barium hydroxide)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 8
UN/ID Number: 3262
Label: 8
Packaging group: III
Proper shipping name: CORROSIVE SOLID, BASIC, INORGANIC,
N.O.S. (Barium hydroxide)

15 Regulations

Product related hazard informations:

Hazard symbols:

Xn Harmful

Risk phrases:

20/22 Harmful by inhalation and if swallowed.

Safety phrases:

28 After contact with skin, wash immediately with plenty of water

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product contains barium and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

USA

(Contd. on page 7)

Material Safety Data Sheet
acc. to OSHA and ANSI

Printing date 08/28/2006

Reviewed on 08/25/2006

Product name: Barium hydroxide

(Contd. of page 6)

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders

USA

Material Safety Data Sheet

(complies with OSHA's Hazard Communication Standard)
(29 CFR 1910.1200)

Date Prepared:
8/6/02

Section I

Manufacturer's Name:

Hormel Foods Corporation
1 Hormel Place
Austin, MN 55912

Emergency Telephone Number:

507-437-5264

Telephone Number for Information:

507-437-5264

Section II

Hazardous Ingredients/Identity Information:

Porcine Choice White Grease - Animal Fats

NOTE: According to OSHA regulation 29 CFR 1910.1200, appendixes A and B, animal fats are not considered hazardous.

Section III

Physical/Chemical Characteristics:

Boiling Point	N/A	Specific Gravity (H ₂ O=1)	0.88
Vapor Pressure	N/A	Melting Point	105°F
Vapor Density	N/A	Evaporation Rate	N/A
Solubility in Water	Not Soluble		
Appearance and Odor	amber to brown liquid when heated, white to brown when solid, fatty odor.		

Section IV

Fire and Explosion Hazard Data:

Flash Point:
450°F

Flammable Limits:
530°F

LEL:

UEL:

N/A

N/A

Extinguishing Media:

Dry chemical, carbon dioxide, water spray, or regular foam.

Special Fire Fighting Procedures:

For larger fires, use water spray, fog or regular foam.

(See 1990 Emergency Response Guidebook, DOT P5800.5)

Unusual Fire and Explosion Hazards:

No acute hazard.

Section V

Reactivity Data:

Stability:

Stable

Incompatibility (Materials to Avoid):

Oxidizers (strong)

Hazardous Decomposition or Byproducts:

Thermal decomposition products may include toxic oxides of carbon.

Hazardous Polymerization:

Not reported to occur.

Section VI

Health Hazard Data:

Route(s) of Entry:

Inhalation

N/A

Skin

N/A

Ingestion

N/A

Health Hazards:

According to OSHA regulation 29 CFR 1910.1200 Appendixes A and B, feed

Fats are not considered hazardous.

Carcinogenicity?

N/A

NTP?

N/A

IARC Monographs?

N/A

OSHA regulated?

N/A

Signs and Symptoms of Exposure

N/A

Medical Conditions Generally Aggravated by Exposure

N/A

Exposure and First Aid Procedures

Hot liquid fat may cause burns

Section VII

Precautions for Safe Handling and Use:

Steps to be taken in case material is released or spilled:

Take steps to contain material, let harden, then remove.

May use suitable absorbent.

Waste Disposal Method:

Rendering company or landfill. May be subject to Federal, State or Local Laws.

Precautions to be taken in handling and storage:

N/A

Other Precautions:

N/A

Section VIII

Control Measures:

Respiratory Protection	N/A		
Ventilation:			
Local Exhaust	N/A	Special	N/A
Mechanical	N/A	Other	N/A
Protective Gloves	N/A	Eye Protection	N/A
Other Protective Clothing			
Or Equipment	N/A		
Work/Hygienic Practices	N/A		

Section IX

Special Precautions and Comments:

Precautions to be taken in handling and storage:	None
Other Precautions:	None
Effective Date:	August 8, 2001
Phone Number:	507-437-5264

IMPORTANT:

The information and data herein are believed to be accurate and have been compiled from sources believed to be reliable. It is offered for your consideration, investigation and verification. Buyer assumes all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Hormel Foods Corporation makes no warranty of any kind, express or implied, concerning the completeness of the information and data herein. Hormel Foods Corporation will not be liable for claims relating to any party's use of, or reliance on, information and data contained herein regardless of whether it is claimed that the information and data are inaccurate, incomplete or otherwise misleading. This information relates to the material designated and may not be valid for such material used in combination with any other materials nor in any process.



The Chemical Company

Safety data sheet

1,2-Pentanediol

(Amylene Glycol)

Revision date : 2006/05/09

Version: 1.0

Page: 1/5

(30036634/MDS GEN US/EN)

1. Substance/preparation and company identification

Company

BASF CORPORATION
100 Campus Drive
Florham Park, NJ 07932

24 Hour Emergency Response Information

CHEMTREC: 1-800-424-9300
BASF HOTLINE: 1-800-832-HELP

2. Composition/information on ingredients

CAS Number

5343-92-0

41051-72-3

Content (W/W)

80.0 - 100.0 %

1.0 - 5.0 %

Chemical name

pentane-1,2-diol

1,2-Butanediol, 2-methyl-

3. Hazard identification

Emergency overview

DANGER: CAUSES EYE IRRITATION.
RISK OF SERIOUS DAMAGE TO EYES.
INGESTION MAY CAUSE GASTRIC DISTURBANCES.
Avoid contact with the skin, eyes and clothing.
Avoid inhalation of mists/vapours.
Use with local exhaust ventilation.
Wear appropriate respiratory protection.
Wear NIOSH-certified chemical goggles.
Wear full face shield if splashing hazard exists.
Wear chemical resistant protective gloves.
Wear protective clothing.
Eye wash fountains and safety showers must be easily accessible.

Potential health effects

Primary routes of exposure

Routes of entry for solids and liquids include eye and skin contact, ingestion and inhalation. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquified gases.

4. First-aid measures

General advice:

Remove contaminated clothing.

Safety data sheet

1,2-Pentanediol

Revision date : 2006/05/09
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(30036634/MDS_GEN_US/EN)

If inhaled:

If difficulties occur after vapour/aerosol has been inhaled, remove to fresh air and seek medical attention.

If on skin:

Wash thoroughly with soap and water.

If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open. Seek medical attention.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention.

5. Fire-fighting measures

Flash point:	110 °C	(DIN 51758)
Autoignition:	380 °C	(DIN 51794)
Lower explosion limit:	1.7 %(V)	
Upper explosion limit:	9.3 %(V)	

Suitable extinguishing media:

water, alcohol-resistant foam, dry extinguishing media, carbon dioxide

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

NFPA Hazard codes:

Health : 3 Fire: 1 Reactivity: 0 Special:

6. Accidental release measures

Personal precautions:

Handle in accordance with good industrial hygiene and safety practice.

Environmental precautions:

Discharge into the environment must be avoided.

Cleanup:

For large amounts: Pump off product.

For residues: Pick up with suitable absorbent material (e.g. sand, sawdust, general-purpose binder, kieselguhr). Dispose of absorbed material in accordance with regulations.

7. Handling and storage

Handling

General advice:

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:

Take precautionary measures against static discharges. Sources of ignition should be kept well clear.

Safety data sheet

1,2-Pentanediol

Revision date : 2006/05/09
Version: 1.0

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(30036634/MDS_GEN_US/EN)

Storage

Storage stability:
Storage duration: 24 Months

8. Exposure controls and personal protection

Advice on system design:
Provide local exhaust ventilation to control vapours/mists.

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate.

Hand protection:
Wear chemical resistant protective gloves., Consult with glove manufacturer for testing data.

Eye protection:
Tightly fitting safety goggles (chemical goggles). Wear face shield if splashing hazard exists.

Body protection:
Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:
Avoid contact with the skin, eyes and clothing. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

9. Physical and chemical properties

Form:	liquid	
Odour:	odourless	
Colour:	colourless to yellowish	
pH value:	7 - 8	(500 g/l, 20 °C)
Melting point:	< -40 °C	
Boiling point:	208 - 210 °C	
Vapour pressure:	< 1 mbar	(20 °C)
Density:	0.97 g/cm3	(20 °C)
Solubility in water:		(20 °C) miscible

10. Stability and reactivity

Hazardous reactions:
No hazardous reactions if stored and handled as prescribed/indicated.

11. Toxicological information

Acute toxicity

Oral:
LD50/rat: > 12,000 mg/kg

Skin irritation:
rabbit: non-irritant (OECD Guideline 404)

Safety data sheet

1,2-Pentanediol

Revision date : 2006/05/09
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(30036634/MDS_GEN_US/EN)

Eye irritation :
rabbit: Irritant. (OECD Guideline 405)

Risk of serious damage to eyes.

Chronic toxicity

Other information:
No experimental evidence available for genotoxicity in vitro (Ames test negative).

12. Ecological information

Environmental fate and transport

Biodegradation:
Test method: OECD 302B; ISO 9888; 88/302/EEC, part C
Method of analysis: DOC reduction
Degree of elimination: > 90 %
Evaluation: Easily eliminated from water.

Chemical oxygen demand (COD):
2,070 mg/g

Biochemical oxygen demand (BOD):
: 1,070 mg/g

Adsorbable organically-bound halogen (AOX):

This product contains no organically-bound halogen.

Acute and prolonged toxicity to fish:
OECD 203; ISO 7346; 84/449/EEC, C.1 static
zebra fish/LC50 (96 h): > 1,000 mg/l

Acute toxicity to aquatic invertebrates:
Directive 79/831/EEC Daphnia magna/EC50 (48 h): > 500 mg/l

Toxicity to aquatic plants:
DIN 38412 Part 9 EC50 (72 h): > 500 mg/l

Toxicity to microorganisms:
DIN 38412 Part 8 bacterium/EC50 (17 h): > 10,000 mg/l

13. Disposal considerations

Waste disposal of substance:
Do not discharge into waterways or sewer systems without proper authorization.
Dispose of in accordance with national, state and local regulations.

Container disposal:
Dispose of container and any rinsate in an environmentally safe manner. Recommend crushing, puncturing or other means to prevent unauthorized use of used containers.

14. Transport information

Safety data sheet

1,2-Pentanediol

Revision date : 2006/05/09
Version: 1.0

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(30036634/MDS_GEN_US/EN)

Land transport USDOT

Not classified as a dangerous good under transport regulations

Sea transport IMDG

Not classified as a dangerous good under transport regulations

Air transport IATA/ICAO

Not classified as a dangerous good under transport regulations

15. Regulatory information

Federal Regulations

Registration status:
TSCA, US

released / listed

OSHA hazard category:

Skin and/or eye irritant

SARA hazard categories (EPCRA 311/312): Acute

16. Other information

HMIS III rating

Health: 3 Flammability: 1 Physical hazard: 0

HMIS uses a numbering scale ranging from 0 to 4 to indicate the degree of hazard. A value of zero means that the substance possesses essentially no hazard; a rating of four indicates high hazard.

Local contact information
prod_reg@basf.com

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE, IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY BASF HEREUNDER ARE GIVEN GRATIS AND BASF ASSUMES NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK.

END OF DATA SHEET



Material Safety Data Sheet

Catalog Number: 207085
Revision date: 25-Apr-2006

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND COMPANY INFORMATION

Catalog Number: 207085

Product name: AMYL ACETATE

Supplier:

MP Biomedicals, LLC
29525 Fountain Parkway
Solon, OH 44139
tel: 440-337-1200

Emergency telephone number: CHEMTREC: 1-800-424-9300 (1-703-527-3887)

2. COMPOSITION/INFORMATION ON INGREDIENTS

Components	CAS Number	Weight %	ACGIH Exposure Limits:	OSHA Exposure Limits:
AMYL ACETATE	628-63-7	90 - 100%	50 ppm TWA (Pentyl acetate, all isomers)	100 ppm TWA; 525 mg/m ³ TWA

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Flammable, Harmful to flora, fauna, soil organisms and aquatic organisms.

Category of Danger:

Flammable, Dangerous for the environment

Principle routes of exposure: Skin

Inhalation: May cause irritation of respiratory tract

Ingestion: May be harmful if swallowed.

Skin contact: May cause allergic skin reaction

Eye contact: Avoid contact with eyes

Statements of hazard Flammable

Statement of Spill or Leak - ANSI Label Eliminate all ignition sources. Absorb and/or contain spill with inert materials (e.g., sand, vermiculite). Then place in appropriate container. For large spills, use water spray to disperse vapors, flush spill area. Prevent runoff from entering waterways or sewers.

Precautions - ANSI Label Do not breathe vapors or spray mist Do not get in eyes, on skin, or on clothing. Wash thoroughly after handling.

4. FIRST AID MEASURES

General advice: In the case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

Inhalation: Move to fresh air. Call a physician immediately.

Skin contact: Rinse immediately with plenty of water and seek medical advice

Ingestion: Do not induce vomiting without medical advice.

Eye contact: In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

Catalog Number: 207085

Product name: AMYL ACETATE

Page 1 of 6

Protection of first-aiders: No information available

Medical conditions aggravated by exposure: None known

5. FIRE FIGHTING MEASURES

Suitable extinguishing media:

Carbon dioxide (CO₂), Dry powder, Foam, Water may be ineffective., Use dry chemical, CO₂, water spray or 'alcohol' foam.

Specific hazards:

Burning produces irritant fumes.

Unusual hazards:

None known

Special protective equipment for firefighters:

Wear self contained breathing apparatus for fire fighting if necessary. In the event of fire and/or explosion do not breathe fumes.

Specific methods:

Water mist may be used to cool closed containers.

Flash point:

Not determined

Autoignition temperature:

360-380 °C (680-716 °F)

NFPA rating:

NFPA Health:	1
NFPA Flammability:	2
NFPA Reactivity:	0

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:

Use personal protective equipment.

Environmental precautions:

Prevent product from entering drains.

Methods for cleaning up:

Ground and bond containers when transferring material

7. HANDLING AND STORAGE

Storage:

ROOM TEMPERATURE

Handling:

Use only in area provided with appropriate exhaust ventilation.

Safe handling advice:

Wear personal protective equipment. Remove and wash contaminated clothing before reuse.

Technical measures/storage conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from open flames, hot surfaces and sources of ignition

Incompatible products:

Oxidising and spontaneously flammable products

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures: Ensure adequate ventilation, especially in confined areas.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory protection: In case of mist, spray or aerosol exposure wear suitable personal respiratory protection and protective suit.

Hand protection: Pvc or other plastic material gloves

Skin and body protection: Impervious clothing Long sleeved clothing

Eye protection: If splashes are likely to occur, wear: Safety glasses with side-shields

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice.



9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance and Odor**

Pure n-amyl acetate is a clear, colorless liquid. Commercial grades may be yellow. All grades have a banana-like odor.

Physical state:

Liquid

Formula:

C7-H14-O2

Molecular weight:

130.18

Melting point/range:

-70.8 °C (-95.4 °F)

Boiling point/range:

149.25 °C (300.7 °F)

Density:

0.876 at 20 °C (water = 1)

Vapor pressure:

5 mm Hg (0.67 kPa) at 25 °C

Evaporation rate:

0.42 (n-butyl acetate = 1)

Vapor density:

4.5 (air = 1)

Solubility (in water):

Slightly soluble

Flash point:

Not determined

Autoignition temperature:

360-380 °C (680-716 °F)

10. STABILITY AND REACTIVITY**Stability:**

Stable under recommended storage conditions.

Polymerization:

None under normal processing.

Hazardous decomposition products:

Thermal decomposition can lead to release of irritating gases and vapours such as carbon oxides.

Materials to avoid:

Nitrates; strong oxidizers, alkalies, and acids

Conditions to avoid:

Exposure to air or moisture over prolonged periods.

11. TOXICOLOGICAL INFORMATION**Product Information****Acute toxicity****Components**

AMYL ACETATE

RTECS Number:

AJ1925000

Selected LD50s and LC50s

Not Determined

Chronic toxicity:

Chronic exposure may cause nausea and vomiting, higher exposure causes unconsciousness.

Local effects:

Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting.

Specific effects:

May include moderate to severe erythema (redness) and moderate edema (raised skin), nausea, vomiting, headache.

Primary irritation:

No data is available on the product itself.

Carcinogenic effects:

No data is available on the product itself.

Mutagenic effects:

No data is available on the product itself.

Reproductive toxicity:

No data is available on the product itself.

Components

AMYL ACETATE

NIOSH - Health Effects

Acute irritation of the eyes and upper respiratory tract, possible CNS depression, chronic skin irritation

NIOSH - Target Organs

eyes, skin, respiratory system, CNS

12. ECOLOGICAL INFORMATION**Mobility:**

No data available

Bioaccumulation:

No data available

Ecotoxicity effects:

No data available

Aquatic toxicity:

May cause long-term adverse effects in the aquatic environment.

Components	U.S. DOT - Appendix B - Marine Pollutan	U.S. DOT - Appendix B - Severe Marine Pollutants	United Kingdom - The Red List:
AMYL ACETATE	Not Listed	Not Listed	Not Listed
Components	Germany VCI (WGK)	World Health Organization (WHO) - Drinking Water	Ecotoxicity - Fish Species Data
AMYL ACETATE	1	Not Listed	LC50 (96 hr) bluegill sunfish: 650 mg/L. Cond: Static, 23 °C.; LC50 (24-96 hr) mosquito fish: 65 mg/L.
Components	Ecotoxicity - Freshwater Algae Data	Ecotoxicity - Microtox Data	Ecotoxicity - Water Flea Data
AMYL ACETATE	Not Listed	Not Listed	Not Listed
Components	EPA - ATSDR Priority List	EPA - HPV Challenge Program Chemical List	California - Priority Toxic Pollutants
AMYL ACETATE	Not Listed	indicator 2; Not sponsored	Not Listed
Components	California - Priority Toxic Pollutants	California - Priority Toxic Pollutants	
AMYL ACETATE	Not Listed	Not Listed	

13. DISPOSAL CONSIDERATIONS

Waste from residues / unused products:

Waste disposal must be in accordance with appropriate Federal, State, and local regulations. This product, if unaltered by use, may be disposed of by treatment at a permitted facility or as advised by your local hazardous waste regulatory authority. Residue from fires extinguished with this material may be hazardous.

**Contaminated packaging:
Methods for cleaning up:**

Do not re-use empty containers
Ground and bond containers when transferring material

14. TRANSPORT INFORMATION

UN/Id No:

1104

DOT:

Proper shipping name:
IATA Hazard Label(s):
Hazard Class

Amyl acetates (flammable liquid)
Flammable Liquid
3 -
Flammable liquid
III

Packing group:

III

Emergency Response Guide Number (ERG):

129

Components

AMYL ACETATE

U.S. DOT - Appendix A Table 1 - Reportable Quantities
RQ = 5000 pounds (2270 kg)

TDG (Canada):

WHMIS hazard class:

B2 flammable liquids



:

IMDG/IMO

Proper shipping name:

Amyl acetates (flammable liquid)

IMDG - Hazard Classifications

IMDG class or division = 3

IMDG - Regulated Substances

UN1104

Components

U.S. DOT - Appendix B - Marine Pollutan

U.S. DOT - Appendix B - Severe Marine
Pollutants

AMYL ACETATE

Not Listed

Not Listed

IMO-labels:

15. REGULATORY INFORMATION

International Inventories

Components

AMYL ACETATE

Inventory - United States TSCA - Sect. 8(b)

Present

Canada DSL Inventory List -

Present

Australia (AICS):

Present

Inventory - China:

Present

EU EINECS List -

211-047-3; C7H14O2

Inventory - Japan:

2-733; 2-735

Korean KECL:

KE-01766

Philippines PICCS:

Present

U.S. regulations:

Components

AMYL ACETATE

California Proposition 65
-
Not ListedMassachusetts Right to
Know List:
[present]New Jersey Right to
Know List:
sn 1321Pennsylvania Right to Know
List:
environmental hazard

Components

AMYL ACETATE

Florida substance List:
[present]Rhode Island Right to
Know List:
ToxicIllinois - Toxic Air
Contaminants
Not ListedConnecticut - Hazardous Air
Pollutants
10,500 ug/m³ HLV; 2 ppmv HLV

Components

AMYL ACETATE

SARA 313 Emission
reporting/Toxic Release
of Chemicals
Not ListedCERCLA/SARA - Section NTP:
302 Extremely Haz
Not Listed

None

IARC:
None

SARA 313 Notification:

The above is your notification as to the SARA 313 listing for this product(s) pursuant to Section 313 of Title III of the Superfund Ammendments and Reauthorization Act of 1986 and 40 CFR Part 372.

If you are unsure if you are subject to the reporting requirements of Section 313, or need more information, please call the EPA Emergency Planning and Community Right-To-Know Information Hotline: (800) 535-0202 or (202) 479-2499 (in Washington, DC or Alaska).

State Notification:

The above information is your notice as to the Right-to-Know listings of the stated product(s). Individual states will list chemicals for a variety of reasons including, but not limited to, the compounds toxicity; carcinogenic, tumorigenic and/or reproductive hazards; and the compounds environmental impact if accidentally released.

16. OTHER INFORMATION**Prepared by: Health & Safety**

Disclaimer: The information and recommendations contained herein are based upon tests believed to be reliable. However, MP Biomedicals does not guarantee the accuracy or completeness NOR SHALL ANY OF THIS INFORMATION CONSTITUTE A WARRANTY, WHETHER EXPRESSED OR IMPLIED, AS TO THE SAFETY OF THE GOODS, THE MERCHANTABILITY OF THE GOODS, OR THE FITNESS OF THE GOODS FOR A PARTICULAR PURPOSE. Adjustment to conform to actual conditions of usage maybe required. MP Biomedicals assumes no responsibility for results obtained or for incidental or consequential damages, including lost profits arising from the use of these data. No warranty against infringement of any patent, copyright or trademark is made or implied.

End of Safety Data Sheet



Material Safety Data Sheet

The Dow Chemical Company

Product Name: AMINOETHYLETHANOLAMINE.

Issue Date: 08/02/2006
Print Date: 05 Aug 2006

The Dow Chemical Company encourages and expects you to read and understand the entire (M)SDS, as there is important information throughout the document. We expect you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

1. Product and Company Identification

Product Name
AMINOETHYLETHANOLAMINE.

COMPANY IDENTIFICATION

The Dow Chemical Company
2030 Willard H. Dow Center
Midland, MI 48674
USA

Customer Information Number: 800-258-2436

EMERGENCY TELEPHONE NUMBER

24-Hour Emergency Contact: 989-636-4400
Local Emergency Contact: 989-636-4400

2. Hazards Identification

Emergency Overview

Color: Colorless

Physical State: Liquid

Odor: Slightly ammoniacal

Hazards of product:

DANGER! Causes severe eye burns. Causes severe skin burns. Causes burns of the mouth and throat. May cause allergic skin reaction. Aspiration hazard. Can enter lungs and cause damage. Keep upwind of spill.

OSHA Hazard Communication Standard

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Potential Health Effects

Eye Contact: May cause severe irritation with corneal injury which may result in permanent impairment of vision, even blindness. Chemical burns may occur.

Skin Contact: Brief contact may cause skin burns. Symptoms may include pain, severe local redness and tissue damage. May cause more severe response on covered skin (under clothing, gloves). Classified as corrosive to the skin according to DOT guidelines.

* Indicates a Trademark

Skin Absorption: Prolonged skin contact is unlikely to result in absorption of harmful amounts.

Skin Sensitization: Skin contact may cause an allergic skin reaction. Individuals who have had an allergic skin reaction to similar materials may have an allergic skin reaction to this product. The similar material(s) is/are: Triethylenetetramine (TETA). Has caused allergic skin reactions when tested in mice. Has caused allergic skin reactions when tested in guinea pigs.

Inhalation: At room temperature, exposure to vapor is minimal due to low volatility; vapor from heated material may cause respiratory irritation.

Ingestion: Low toxicity if swallowed. Swallowing may result in gastrointestinal irritation or ulceration. Swallowing may result in burns of the mouth and throat. Aspiration into the lungs may occur during ingestion or vomiting, causing tissue damage or lung injury.

Effects of Repeated Exposure: In animals, effects have been reported on the following organs: Gastrointestinal tract. Kidney.

Birth Defects/Developmental Effects: Has caused birth defects in laboratory animals.

Reproductive Effects: Has been toxic to the fetus in laboratory animal tests. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

3. Composition Information

Component	CAS #	Amount
Aminoethylethanolamine	111-41-1	> 99.5 %
Triethylenetetramine mixture	112-24-3	> 0.1 %

4. First-aid measures

Eye Contact: Wash immediately and continuously with flowing water for at least 30 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Skin Contact: Immediately wash thoroughly any size exposure with non-abrasive soap and large quantities of water for 30 minutes while removing contaminated clothing and shoes. Destroy contaminated leather items such as shoes, belts, and watchbands. Wash contaminated clothing before reuse.

Inhalation: Move person to fresh air; if effects occur, consult a physician.

Ingestion: Do not induce vomiting. Give one cup (8 ounces or 240 ml) of water or milk if available and transport to a medical facility. Do not give anything by mouth to an unconscious person.

Notes to Physician: Due to irritant properties, swallowing may result in burns/ulceration of mouth, stomach and lower gastrointestinal tract with subsequent stricture. Aspiration of vomitus may cause lung injury. Suggest endotracheal/esophageal control if lavage is done. Chemical eye burns may require extended irrigation. Obtain prompt consultation, preferably from an ophthalmologist. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. Fire Fighting Measures

Extinguishing Media: Water fog or fine spray. Dry chemical fire extinguishers. Carbon dioxide fire extinguishers. Foam. Do not use direct water stream. May spread fire. Alcohol resistant foams (ATC type) are preferred. General purpose synthetic foams (including AFFF) or protein foams may function, but will be less effective.

Fire Fighting Procedures: Keep people away. Isolate fire and deny unnecessary entry. Use water spray to cool fire exposed containers and fire affected zone until fire is out and danger of reignition has passed. Fight fire from protected location or safe distance. Consider the use of unmanned hose holders or monitor nozzles. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Burning liquids may be extinguished by dilution with water. Do not use direct water stream. May spread fire. Move container from fire area if

this is possible without hazard. Burning liquids may be moved by flushing with water to protect personnel and minimize property damage.

Special Protective Equipment for Firefighters: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Unusual Fire and Explosion Hazards: Container may rupture from gas generation in a fire situation. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

Hazardous Combustion Products: During a fire, smoke may contain the original material in addition to combustion products of varying composition which may be toxic and/or irritating. Combustion products may include and are not limited to: Nitrogen oxides. Carbon monoxide. Carbon dioxide.

6. Accidental Release Measures

Steps to be Taken if Material is Released or Spilled: Contain spilled material if possible. Small spills: Absorb with materials such as: Clay. Dirt. Milsorb®. Sand. Do NOT use absorbent materials such as: Cellulose. Sawdust. Collect in suitable and properly labeled containers. Large spills: Dike area to contain spill. Dilute with large quantities of water. Pump into suitable and properly labeled containers. See Section 13, Disposal Considerations, for additional information.

Personal Precautions: Evacuate area. Only trained and properly protected personnel must be involved in clean-up operations. Keep unnecessary and unprotected personnel from entering the area. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

Environmental Precautions: Prevent from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. Handling and Storage

Handling

General Handling: Do not get in eyes, on skin, on clothing. Do not swallow. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Keep container closed. Use with adequate ventilation. See Section 8, EXPOSURE CONTROLS AND PERSONAL PROTECTION. Do not use sodium nitrite or other nitrosating agents in formulations containing this product. Suspected cancer-causing nitrosamines could be formed.

Other Precautions: Spills of these organic materials on hot fibrous insulations may lead to lowering of the autoignition temperatures possibly resulting in spontaneous combustion.

Storage

Store in a dry place. Do not store in: Zinc. Copper. Galvanized containers. Copper alloys. Additional storage and handling information on this product may be obtained by calling your Dow sales or customer service contact.

8. Exposure Controls / Personal Protection

Exposure Limits

Component	List	Type	Value
Aminoethylethanolamine	Dow IHG	TWA	0.5 mg/m3 SKIN, D-SEN
Triethylenetetramine mixture	WEEL	TWA	6 mg/m3 1 ppm SKIN

A "skin" notation following the exposure guideline refers to the potential for dermal absorption of the material including mucous membranes and the eyes either by contact with vapors or by direct skin contact.

It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

A D-SEN notation following the exposure guideline refers to the potential to produce dermal sensitization, as confirmed by human or animal data.

Personal Protection

Eye/Face Protection: Use chemical goggles. Eye wash fountain should be located in immediate work area.

Skin Protection: Use protective clothing chemically resistant to this material. Selection of specific items such as face shield, boots, apron, or full body suit will depend on the task. Safety shower should be located in immediate work area. Remove contaminated clothing immediately, wash skin area with soap and water, and launder clothing before reuse or dispose of properly. Items which cannot be decontaminated, such as shoes, belts and watchbands, should be removed and disposed of properly.

Hand protection: Use gloves chemically resistant to this material. Examples of preferred glove barrier materials include: Polyethylene. Chlorinated polyethylene. Ethyl vinyl alcohol laminate ("EVAL"). Examples of acceptable glove barrier materials include: Butyl rubber. Natural rubber ("latex"). Polyvinyl chloride ("PVC" or "vinyl"). Viton. Avoid gloves made of: Polyvinyl alcohol ("PVA"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Atmospheric levels should be maintained below the exposure guideline. For most conditions, no respiratory protection should be needed; however, if handling at elevated temperatures without sufficient ventilation, use an approved air-purifying respirator. The following should be effective types of air-purifying respirators: Organic vapor cartridge.

Ingestion: Avoid ingestion of even very small amounts; do not consume or store food or tobacco in the work area; wash hands and face before smoking or eating.

Engineering Controls

Ventilation: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

9. Physical and Chemical Properties

Physical State	Liquid
Color	Colorless
Odor	Slightly ammoniacal
Flash Point - Closed Cup	127 °C (261 °F) ASTM D93
Flammable Limits In Air	Lower: No test data available Upper: No test data available
Autoignition Temperature	No test data available
Vapor Pressure	< 0.01 mmHg @ 20 °C Literature
Boiling Point (760 mmHg)	242.8 °C (469.0 °F) Literature
Vapor Density (air = 1)	3.6 Literature
Specific Gravity (H2O = 1)	1.030 20 °C/20 °C Literature
Liquid Density	1.030 g/ml @ 15.56 °C Literature 1.027 g/ml @ 20 °C Literature 1.035 g/ml @ -45 °C Literature @ freezing pt.
Freezing Point	-45 °C (-49 °F) Literature
Melting Point	not applicable to liquids
Solubility in Water (by weight)	100 % Literature
pH	No test data available
Molecular Weight	104.15 g/mol
Octanol/Water Partition Coefficient	-1.46 Measured

Evaporation Rate (Butyl Acetate = 1) 0.01
Kinematic Viscosity 98 mm²/s @ 25 °C Literature

10. Stability and Reactivity

Stability/Instability

Stable under recommended storage conditions. See Storage, Section 7. Hygroscopic.

Conditions to Avoid: Exposure to elevated temperatures can cause product to decompose. Generation of gas during decomposition can cause pressure in closed systems. Avoid moisture.

Incompatible Materials: Avoid contact with: Nitrites. Strong acids. Strong oxidizers. Product may potentially react with various halogenated organic solvents, resulting in temperature and/or pressure increases. Corrosive when wet. Heating above 60°C in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid unintended contact with: Halogenated hydrocarbons.

Hazardous Polymerization

Will not occur.

Thermal Decomposition

Decomposition products depend upon temperature, air supply and the presence of other materials.

11. Toxicological Information

Acute Toxicity

Ingestion

LD50, Rat 2,000 - 4,000 mg/kg

Skin Absorption

LD50, Rabbit 3,266 mg/kg

LD50, Rat 2,250 mg/kg

Sensitization

Skin

Skin contact may cause an allergic skin reaction. Individuals who have had an allergic skin reaction to similar materials may have an allergic skin reaction to this product. The similar material(s) is/are: Triethylenetetramine (TETA). Has caused allergic skin reactions when tested in mice. Has caused allergic skin reactions when tested in guinea pigs.

Repeated Dose Toxicity

In animals, effects have been reported on the following organs: Gastrointestinal tract. Kidney.

Repeated skin application to laboratory animals did not produce systemic toxicity.

Developmental Toxicity

Has caused birth defects in laboratory animals. However, the route(s) of exposure were not relevant for industrial hazard evaluation.

Reproductive Toxicity

Has been toxic to the fetus in laboratory animal tests. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use.

Genetic Toxicology

In vitro genetic toxicity studies were negative. Animal genetic toxicity studies were negative.

12. Ecological Information

CHEMICAL FATE

Movement & Partitioning

Bioconcentration potential is low (BCF less than 100 or log Pow less than 3). Potential for mobility in soil is very high (Koc between 0 and 50). Given its very low Henry's constant, volatilization from natural bodies of water or moist soil is not expected to be an important fate process.

Henry's Law Constant (H): 8.8E-10 atm*m3/mole; 25 °C Estimated

Partition coefficient, n-octanol/water (log Pow): -1.46 Measured

Partition coefficient, soil organic carbon/water (Koc): 3.5 Estimated

Bioconcentration Factor (BCF): < 3.7; common carp (Cyprinus carpio); Measured

Persistence and Degradability

Material is readily biodegradable. Passes OECD test(s) for ready biodegradability. Material is inherently biodegradable (reaches > 20% biodegradation in OECD test(s) for inherent biodegradability).

Indirect Photodegradation with OH Radicals

Rate Constant	Atmospheric Half-life	Method
1.20E-10 cm3/s	1.1 h	Estimated

OECD Biodegradation Tests:

Biodegradation	Exposure Time	Method
> 97 %	28 d	OECD 301F Test
30 - 50 %	37 d	OECD 302B Test

Biological oxygen demand (BOD):

BOD 5	BOD 10	BOD 20	BOD 28
2 %	64 %	90 %	

Theoretical Oxygen Demand: 2.77 mg/mg

ECOTOXICITY

Material is slightly toxic to aquatic organisms on an acute basis (LC50/EC50 between 10 and 100 mg/L in the most sensitive species tested).

Fish Acute & Prolonged Toxicity

LC50, fathead minnow (Pimephales promelas), 96 h: 520 - 728 mg/l

Aquatic Invertebrate Acute Toxicity

EC50, water flea Daphnia magna, 48 h, immobilization: 65 mg/l

Aquatic Plant Toxicity

EC50, alga Scenedesmus sp., biomass growth inhibition, 72 h: 210 mg/l

Toxicity to Micro-organisms

EC50; bacteria, Growth inhibition, 16 h: > 5,000 mg/l

13. Disposal Considerations

DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. DOW HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN MSDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Recycler. Incinerator or other thermal destruction device. As a service to its customers, Dow can provide names of information resources to help identify waste management companies and other facilities which recycle, reprocess or manage chemicals or plastics, and that manage used drums. Telephone Dow's Customer Information Group at 1-800-258-2436 or 1-989-832-1556 (U.S.), or 1-800-331-6451 (Canada) for further details.

14. Transport Information**DOT Non-Bulk**

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

DOT Bulk

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

IMDG

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

EMS Number: F-A,S-B

ICAO/IATA

Proper Shipping Name: POLYAMINES, LIQUID, CORROSIVE, NOS

Technical Name: AMINOETHYLETHANOLAMINE

Hazard Class: 8 ID Number: UN2735 Packing Group: PG II

Cargo Packing Instruction: 812

Passenger Packing Instruction: 808

This information is not intended to convey all specific regulatory or operational requirements/information relating to this product. Additional transportation system information can be obtained through an authorized sales or customer service representative. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material.

15. Regulatory Information**OSHA Hazard Communication Standard**

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate (Acute) Health Hazard Yes

Delayed (Chronic) Health Hazard Yes

Fire Hazard No

Reactive Hazard No

Sudden Release of Pressure Hazard No

Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Section 313

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Hazardous Substances List and/or Pennsylvania Environmental Hazardous Substance List:

The following product components are cited in the Pennsylvania Hazardous Substance List and/or the Pennsylvania Environmental Substance List, and are present at levels which require reporting.

Component	CAS #	Amount
Aminoethylethanolamine	111-41-1	> 99.5 %

Pennsylvania (Worker and Community Right-To-Know Act): Pennsylvania Special Hazardous Substances List:

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986)

This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

US. Toxic Substances Control Act

All components of this product are on the TSCA Inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30

CEPA - Domestic Substances List (DSL)

All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or are not required to be listed.

16. Other Information**Product Literature**

Additional information on this product may be obtained by calling your Dow Chemical Company sales or customer service contact.

Recommended Uses and Restrictions

Fabric softeners. Surfactants. Others.

Revision

Identification Number: 467 / 1001 / Issue Date 08/02/2006 / Version: 2.1

Most recent revision(s) are noted by the bold, double bars in left-hand margin throughout this document.

Legend

N/A	Not available
W/W	Weight/Weight
OEL	Occupational Exposure Limit
STEL	Short Term Exposure Limit
TWA	Time Weighted Average
ACGIH	American Conference of Governmental Industrial Hygienists, Inc.
DOW IHG	Dow Industrial Hygiene Guideline
WEEL	Workplace Environmental Exposure Level
HAZ DES	Hazard Designation

The Dow Chemical Company urges each customer or recipient of this (M)SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this (M)SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given. Regulatory requirements are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer-specific (M)SDSs, we are not and cannot be responsible for (M)SDSs obtained from any source other than ourselves. If you have obtained an (M)SDS from another source or if you are not sure that the (M)SDS you have is current, please contact us for the most current version.

FMS OFFICE
0-11

Tank wash shift Report

January 01 2009 - July 28 2009

TW
Repts.
Box 11

(21)

CES Tankwash Report

Shift 1
 Date 7-24-09
 Leadman Amundo

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124899	DART	5-06	Carbon	218				1			CP
222603	DART	42 FC	Carbon	218				1			CP
324873	TEXAS	1802	Petro Naphtha	118				3			FR
424898	L W Miller	644	Brown pyre	118 1816				5			SR
524874	Inner Plant	1196	Ext wash ONLY	1115				1			CP
6	Inner Plant	517									
724823	CES	249	methanol	118				5			SR
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CES Tankwash report

Shift 1
 Date 7-22-99
 Leadman Amirado

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CES	243	Pump	118				3			JR
2	24801	CES	226	methanol	117				3			JR
3	24802	QAP	4278	carbon	117				3			SR
4		CES	TOTE	Flam. Liquid	11816				4			CP
5		CES	TOTE	Flam. Liquid	11816				3			JR
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 33.75
 349.25

CES Tankwash Report

Shift _____
 Date 7-21-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24881	TRIPPLE	LR23	oil/water	118				4			AR
2	24867	CAS	133	Resin	118				3			SR
3	24866	CES	206	Hot waste	118/18	2	DRUM		3			AR
4		CES	TOTE	Flammable liq.	118/16				3			SR
5		CES	TOTE	Flammable liq.	118/16				4			CP
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CES Tankwash Report

Shift 1
 Date 7-22-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24868	Dart	DC 5-F6	Carbon	117				3		JR	CP
2	24804	Firebird	353	Fuel Oil	118				3			AR
3		CES	TOTE	Flam. High	11816				3			JR
4		CES	TOTE	Flam. High	11816				4			CP
5	24888	THE HURON	109	Diesel	118				3		AR	JR
6	24885	LEE'S	2365	Sodium	119				4			CP
7	24890	CES	210	Base Oil	118				4		AR	CP
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CES Tankwash Report

Shift _____
 Date 7-9-08
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124776	JTS	1266	Mines	118				4		CP	AR
224838	JTS	1130	Amines	118				4		AR	JK
324807	CEC	406	Base oil	118				4		CP	JK
424830	Tideport	1075	Fuel oil	1184				4		CP	JK
524850	CEC	234	Caustic	118				4		CP	JK
624843	Chem Pak	3054	Alfonic	118				4		CP	AR
724833	JTS	3396	H/H waste water	118				3	N/C		ST
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CES Tank Wash Report

Shift 1
 Date 7-20-9
 Leadman Armen
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124747	Kirscher	6702	Caustic	118				4			CP
224739	JTS	755	Butyl Acetate	117				1			CP
324742	Tide Port	1639	Naphthalene	118				5			JR
424748	JTS	151	Pump	118				5			JR
524750	CES	409	Base Oil	118				4			CP
624550	CES	252	Waste Oil	118				5			JK
724737	Chem Pak	8475	Wax	118				5			JR
824718	Baker	4841	Crude Oil	1128				3			ST
924551	CES	406	Base Oil	118				3			ST
1024749	Liquid Exp.	957	Kerosine	118				4	N/C		CP
1124829	Firebird	585	Petrol Dist	118				3	N/C		ST
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CES Tank Wash Report

Shift 2nd
 Date 7-6-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24745	Krisner	7023	Liquor	8-11				4			JL
2	24741	ITS	3392	Peracetic Acid	8-11-16				4			JL-JE
3	24740	ITS	2042	Petroleum Oil	8-11				4			JL
4	24741	ITS	27-707	Oil/Waste	8-11-16				4			ST-JL
5	24738	ITS	6508	Cattle Stock	8-11-16				4			ST-JL
6	24735	ITS	7202	Xylene	8-11-16				21			ST-JL
7	24746	CES	221	Light Ends	8-11				4			JL
8	24735	ITS	154	Pump & Hoses	8-11				4			ST
9	24731	Baker	SV24666	Crude Oil	11-12				5		N/C	B-H
10	24718	Baker	MX4850L	Crude Oil	8-11-12-18	75	5915		3		N/C	JE
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CES Tankwash Report

Shift 1
 Date 7-2-09
 Leadman Arrese
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24719	CES	271	crude oil	118				5			JR
2 24723	ITS	151	Pump	118				3			AR
3 24713	Bull 7 ex	1218	crude oil	118				4			CP
4 24721	Firebird	514	used oil					4			CP
5 24715	Firebird	514	used oil					3			CP
6 24709	Firebird	8272	xylen					5			JR
7 24757	H & K	1-65	Asphalt	118				5			JR
8 24726	CES	104	gas-water	118				5			JR
9 24754	ITS	1266	MEK	117				4			JR
10 24753	ITS	942	caustic	118				3		AR	ST
11 24755	ITS	761	solvent	117				3		AR	ST
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

CES Tankwash Report

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24708	DART	270 tes	carbon	8-11				4			ST
2 24691	Fire Bird	361	cutler stock	8-11	355 ⁵			3			JE
3 24780	CES	281	lightends	8-11				4			ST
4 24712	Bullz Eye	3024	crude oil	8-11				5			B-H
5 24714	ITS	987	Acid NP 150	8-11				3			JE
6 24717	ITS	922	NP 150	8-11				5			B-H
7 24722	CES	228	Lube add	8-11-12				4			JL
8 24714	ITS	693	Lube add	8-11-12				4			ST
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CES Tankwash Report

Shift _____
 Date 7-1-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24700	TTS	707	WGA-15L	11818				3		AR	ST
2	24683	RFR	239832	HydroTest/water	118				4			CP
3	24704	Firebird	344	wax	11108				5			JR
4	24546	RFR	255758	HydroTest/water	118				4			CP
5	24543	RFR	255395	HydroTest/water	118				5			JR
6	24547	RFR	260729	HydroTest/water	118				5			JR
7	24710	CES	205	waste water	118				4			CP
8	24690	Firebird	5603	CUTTER/STOK	11128				5			JR
9	24705	CES	105	Diesel	118				4			CP
10	24702	CES	249	waste water	118				5			JR
11	24542	RFR	254321	HydroTest/water	118				4			CP
12	24701	PEIRO	1318	Lube oil	118				5			JR
13	24706	FER Light	21	MER	117				3			ST
14	24707	chemPak	2484	Alfonil	118				4			JR
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CES Tankwash Report

Shift 1
 Date 6-30-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24538	ITS	3396	Brake Fluid	118				5			SR
2	24539	CHS	133	motor oil	118				4			CP
3	24540	ITS	8880	crude oil	118				5			SR
4	24677	Tideport	1048	SP-8	118				4			CP
5	24541	CES	105	oil & water	118				5			SR
6	24677	Tideport	1048	SP-8	118				4			CP
7	24671	R.F.K.	274408	N/H solids	118	16			4			CP
8	24544	Tideport	T-526	Hydro Carb	118				5			SR
9	23935	Firebird	23935	N/H water	118				4			CP
10	24548	ITS	3392	waste water	118				5			SR
11	24680	ITS	7202	methanol	118				4			CP
12	24525	Dana	1564	ADI set up	118	18			3		AR	SI
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CES Tankwash Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24630	ITS	942	Xylene	8-11-16				3			JE
2	24631	CES	210	Light ends	8-11				4			JL
3	24628	ITS	793	Hydrocarbons	8-11-16				3			JE
4	24627	CES	Pump & Hoses		8-11				3			JE
5	24633	CES/Petro	1206	Light ends	8-11-16				3			JE
6	24631	ITS	754	Brake Fluid	8-11-16				4		N/C	JL
7	24628	Tideport	3020	Eastman Shear	8-11				4			ST
8	24621	ITS	965	Methanol	8-11-16				5			B-4
9	24622	ITS	Pump & Hoses		8-11				5			R-17
10	24626	ITS	6508	glycol	8-11-16				4			ST
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CES Tankwash Report

Shift 1
 Date 6-23-89
 Leadman PR Mando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24532	ITS	922	Surfonic	95	117			3			AR
2 24533	ITS	1266	DBF	3	119			4			CP
3 24535	Tidepon	1056	Diesel		1184			3			AR
4 24534	Tidepon	1019	Diesel		1184			4			CP
5 24528	Andrews	5070	calcium stearate		118			5	11/10		SR
6 24532	ITS	965	Detergent								
7 24536	ITS	965	Detergent		117			3			AR
8 24537	Tidepon	1062	oil		1184			4			CP
9 24611	CE3	238	methanol		117			3			AR
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CES Tankwash Report

Shift 2
 Date 6-23-09
 Leadman J.E.
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124614	ITS	942	XYLENE	7-11				4			ST/TE
224612	T. Dept	T-448	pet Dist	8-11				3			J.E.
324615	ITS	6503	XYLENE	7-11				4			ST
424613	ITS	2044	TRIETHANOLAMINE	7-11				3			J.E.
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CES Tankwash Report

Shift 2nd
 Date 6-17-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24481	FireBird	321	Fuel oil	8-11				4			JL
2 24479	ITS	761	Linewash	8-11-16				3			JE
3 24478	Petro Exp.	1028	glycol ether	8-11-16				3			JE
4 24489	CES	239	W. Water	8-11-16				5			B-H
5 26200	Tideport	2026	Heavy Pyrolysis	8-11				4			JL
6 26197	Bullzeye	677	Crude oil	8-11				5			B-H
7 24488	ITS	693	chlorohydrate	8-11-16				4			JL
8 24485	ITS	942	Used oil	8-11-12-16				5			B-H
9 24486	ITS	171	pump & Hoses	8-11				4			JL
10 26198	Cross Road	101	1.	8-11				5			B-H
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CES Tankwash Report

Shift _____
 Date 6-22-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124522	JTS	759	61XCO1	118				4			CP
224520	JTS	743	61XCO1	118				4			CP
324521	JTS	3396	61XCO1	118				3			AR
424523	JTS	922	NP-60	118				5			JR
524519	TEXAS	3169	Mexene	118				5			JR
624524	JTS	2043	Grinding oil	118				5			JR
724511	JTS	7003	WGA-15L	118				4		AR	CP
824526	CES	209	Base oil	118				5			JR
924517	TEXAS	8162	NAPHTHA	118				3		N/C	AR
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CES Tankwash Report

Shift 1
 Date 6-20-09
 Leadman Armande

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124492	Petro	222	CUTTER STOCK	1188		3 D-Turn		5			JR
224512	ITS	942	WGA-15L	11818	70991.			4			CP
324511	ITS	7023	WGA-15L	118				3	W/C		AR
424516	ITS	6508	GLYCOL	118				4			CP
524504	Texas	8124	Naphtha	118				5			JR
624515	Firebird	341	Flammable liquid	118				5			JR
724517	Firebird	5604	butyle Ether.					4			CP
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EPAHQ011000517

CES Tankwash Report

Shift 2nd
 Date 6-11-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126097	CES	233	W. Water	8-11				4			JL
226098	CES	239	W. Water	8-11-16				5			B-H
326031	ITS	6301	Alum. whys	8-11-16				5			B-H
426033	Petra Exp.	1028	Feed Stock	8-11				4			JL
526099	Team	765	Brown Grease	8-11				5			BH-JE
626084	M.P.C	6308	Crude oil	8-11				5			B-H
726088	Global	ST-2	oil water	8-11				4			ST JL
826096	Global	BTT-2	oil water	8-11				3			JE
926089	ITS	6503	glycol	8-11-16				4			ST
1026083	Daker	SV24072	Waste	8-11				3		n/c	JE
1126085	CES	243	Red Resin	7-11				4		n/c	JL
12	Trinae		Refuel later	9-11-18				3			ST-JE
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CES Tankwash Report

Shift _____
 Date 7/28
 Leadman _____

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24900	CES	270	CLASS IV w/w	8-11				3			SP
2	24992	Jet Lube	Totes		11/28/10				4			CP
3	24878	1st Chem Pak	3064	Detergent	11/8				3			A.R.
4	24892	Jet Lube	Totes	Grease	11/28/10				5			SR
5	24879	Inner Pioni	5050	Friction modifier	11/8				3			A.R.
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CES Tankwash Report

Shift 1
 Date 7-25-09
 Leadman A. [Signature]
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24784	CES	223	Reg. white tank	11/16				3			JR
2	24786	CES	100	EXT wash	11/16				4			CP
3	24731	Baker	24666	EXT wash	11/16				4		JR	CP
4	24552	Baker	26117	DIRTY WASH	11/8				3		CP	JR
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CES Tankwash Report

Shift 4
 Date 7-16-09
 Leadman Amendo
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Preserve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24793	Innerplant	189	mineral oil	118				3			JR
2	24787	ITS	942	Polymer	218				4		ST	CP
3	24779	Global	68048	Tallion	118/16				3			JR
4		CKS	TOTC		118/16				4			CP
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CES Tankwash Report

Shift 2nd
 Date 7-16-9
 Leadman DL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24794	Phoenix	NT-1	Oil/Water	4-7-11	-18			4			ST-JE
2	Innerplant	1196	glycol ether	8-11				3			JE
3	CES	100	Exl only	14				4			JK
4	CES	298	Exl only	14				4			JK
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CES Tankwash Report

Shift _____
 Date 7-17-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24858	MRC	6213	crude oil	118				3		ST	JR
2 24791	Firebird	356	Fuel oil	118				3		ST	JR
3 24796	DART	DC 5	N/A carbon	118				4			CP
4 24414	CES	270	HOT W-Water	118				4			AR
5	CES	FOIC		118/16				4			CP
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CES Tankwash Report

Shift _____
 Date 7-23-09
 Leadman Amendo
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24872	HUNT	109	Anti Freeze	118				4			CP
2 24893	CEC	410	Base oil	118				4			CP
3 24871	DAN	7831	Carbon	118				4			CP
4 24895	CEC	271	oil/water	118				3			JR
5 24869	DYNAMIC	2554	N/H Solids	118 16				5			JR
6 24891	DYNAMIC	2570	N/H Solids	118 16				5			JR
7 24886	DYNAMIC	2556	N/H Solids	118 16				5			JR
8 24884	INDUST	1-H1	WASTE Solids	118 16	250 gal. 1/2			3			AR
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CES Tankwash Report

Shift _____
 Date 7-15-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24550	BAKER	207	ATLANTA	8-11				3			JE
2	24781	CES	1-127	Class 1 Sludge	8-11	1.6			3			JE
3	24789	CES	271	W. Water	8-11				3			JE
4	24785	CES	228	W. Water	8-11				3			JE
5	24859	Andrews	1720	Diesel oil	8-11				3		n/c	JE JL
6	24792	Hurt	305	oil	8-11				3			JE
7	24790	CES	213	base oil	8-11				4			JL
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GES Tankwash Report

Shift 1

Date 7-13-91

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24862	RR10	10	Salt	118				3			ST
2	24864	CLS	234	Waste water	108				4			SR
3	24777	ITS	075	Glycol	118				4		AR	SR
4	24863	ITS	6001	Fatty Acid	118				3			ST
5	24780	Leels	2095	Tan oil	118				4		A/C	ST
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CES Tankwash Report

Shift 1

Date 7-10-09

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presoive, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24833	ITS	3396	N/A waste W 118					41		AR	CP
2	24855	Calgon	11014	Carbon	11816				4		CP	SR
3	24856	Green Penke	8009194	oil water	11818				3			SL
4	24860	Team	163	Curide	117				4			CP
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GES Tankwash Report

Shift 2nd
 Date 7-10-9
 Leadman JC

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24413	CES	1041	N/H water	8-11				3			JE
2 24412	CES	213	W. water	8-11				4			JL
3 24732	Firebird	A-611	Lube oil	8-11-12				3			JE-2
4 24852	Continuum	7	Totes	8-11				2			JP
5 24731	Baker	SV 24666	Crude oil	12-8-11				4		A/C	JL
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CES Tankwash Report

Shift 2nd

Date 7-9-9

Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24854	Avr-l	109	Anti-Freeze	8-11				3			JE
2	—	CES	213	Oil/water	8-11				4			JL
3	—	CES	104	W-water	8-11				3			JE
4												
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GES Tankwash Report

Shift _____
 Date 7/9/2
 Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24831	Tideport	T-448	Fuel o.i.	8-11	✓	✓	ASAP	3			ST/JP
2	24549	West	109	Lube o.i.	8-11	✓	✓	ASAP	3			CP/JP
3												
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GES Tankwash Report

Shift 1
 Date 7-6-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124730	ITS	1130	Lube Oil	118				5			SR
224731	Baker	24666	Oil Slurry	11812				5	NIC		SR
324718	Baker	481	crude oil	11128				3	NIC		ST
424732	Kreher	6701	Lube Oil	118				4			CP
524734	ITS	5507	Diesel	118				4			CP
6	CKG	TOTE	7	1016				4			CP
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GES Tankwash Report

Shift 1

Date 7-4-09

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24725	CE3	7253	waste water	11816				4			CP
2	24711	Sludge	Pump	Sludge	11128				5			SR
3	24727	CE3	234	waste water	11816				3			AR
4	24728	CE3	205	waste water	118				4			CP
5	24729	CE3	256	oil recovery	11816				3			AR
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CES Tankwash Report

Shift 2nd
 Date 7-3-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24770	ETS	7003	ACI - 14	8-11				4			JE
2		CKG	4	40-tes	8-11-16				5			TL
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CES Tank Wash Report

Shift 1
 Date 7-3-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24761	Firebird	343	metalk	1110				3			SI
2 24763	F T S	61-922	Brake Fluid	118				4			CP
3 24762	Firebird	361	Brake Fluid	118				5			JR
4 24767	T T S	61-965	TA-Glycolic Acid	118				3			ST
5 24764	T T S	793	CHOROXYD	118				4			CP
6 24769	F T S	6701	Detergent	118				5			JK
7 24766	Tide Pon	1048	PiB 140F250	1484				5			JR
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CES Tankwash Report

Shift 2nd
 Date 7-2-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24765	CES	228	W. Water	8-11-16				3			JE
2 24756	ITS	8880	Detergent	8-11				3			JE
3 24758	ITS	3396	Detergent	8-11				3			JE
4 24760	ITS	6201	sloic Acid	8-11				3			JE
5 24724	ITS	6001	Gas add.	8-11-12				3			JE
6 24751	ITS	LT-982	Propon. Acid	8-11				5			B-14
7 24752	Kemco	K-3	Filter cake	8-11-12-18-16	350			4			ST-JL
8 24759	CES	V-65	Sludge	8-11-16 ¹⁸	200	500	2/0	5			B-14
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CES Tankwash Report

Shift _____
 Date 6-26-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24648	CES	260	caustic	11816				3			ST
2 24645	JTS	6507	Polymer	11818				5	N/C		ST
3 24647	Petro	1318	Lube oil	118				1			CP
4 24605	JTS	942	Prepione PC	117				4			CP
5	JTS	942									
6 24649	Firebird	352	Fatty Acid	118				1			CP
7			Lube oil	118				1			CP
8	CES	254	caustic	118				4	N/C		ST
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CES Tankwash Report

Shift 2nd
 Date 6-29-9
 Leadman SV

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24679	ITS	6701	MEA	8-11				5			B-14
2	24681	Dynamic	FTS17	Oil/sludge	8-11				4			ST
3	24676	Team	7417	Choline	8-11				5			D-H
4	24673	Hurt	109	Diesel/Antiknock	8-11				5			JL-B-11
5	24675	Tideport	1055	Light Fuel	8-11				5			B-14
6	24674	ITS	10901	Gas add	8-11-12				4			JL
7	24525	DANA	1564	HDI	18				3		n/c	JE
8	24678	CES	205	N/H Water	8-11				4			JL
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CES Tankwash Report

Shift 2nd
 Date 6-28-9
 Leadman JE

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24664	ITS	2042	41304 N/A	8-11				5			B-L
2	24608	ITS	1130	PMAC	8-11-16				4			JE
3	24609	ITS	942	010A	8-11				3			JE
4	24659	CES	233	Wastewater	8-11				3			JE
5	24650	Hurt	129	DII	8-11				4			JE
6	24660	ITS	093	AL 304	8-11				3			JE
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CES Tankwash Report

Shift 2nd
 Date 6-27-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24662	ITS	965	DCI	8-11-16				5			B-H
2	24661	ITS	982	Polymer	8-11-16				4			SL
3	24660	ITS	7002	DEA	8-11-16				4			JL
4	24658	Fire Bird	7138	Exter	8-11-16				3			JE
5	24665	CES	228	W. Water	8-11				5			B-H
6	24662	ITS	165	Pump & Hoses	8-11				4			SL
7	24663	Tideport	3009	Renish	8-11-18				3			JE
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CES Tankwash Report

Shift 2nd
 Date 6-26-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24606	ITS	128	Pump & Hoses	8-11				4			JL
2	24653	ITS	761	Ignosulfate	8-11				3			JE
3	24658	Finebird	7138	Methyl Ester	9-11-16				3		n/c	JE
4	24606	ITS	6801	Triglycol	8-11-16				3			JE
5	24652	ITS	6701	PEG 300	8-11-16				3			JE
6	24654	ITS	6508	Ethanolamine	8-11-16				4			JL
7	24656	ITS	987	Retro dist	8-11-16				4			ST-JL
8	24657	CES	100 254	W. Water	8-11-16				4			ST
9	24624	CES	227	Sassy water	8-11				5			B-H
10	24624	ITS	6507	Triglycol	8-11				3			JE
11												
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CES Tankwash Report

Shift _____

Date _____

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24689	ITS	2044	OPG	8-11-16				3			JE
2	24641	Sideport	3009	Butyl Acetate	8-11				5			B-H
3	24638	Baker	26092		8-11				3			JE
4	24643	ITS	893	Lube oil	8-11-16				4			ST
5	24640	ITS	850	Marfan	8-11-16				3			JE
6	24642	CBS	200	Red Resin	8-9-11-16	100	545		4			JL
7	24646	ITS	707	Procheck	8-11				4			JL
8	24644	ITS	703	glycol	8-11				5			B-H
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CES Tankwash Report

Shift 1
 Date 6-25-99
 Leadman Armenio

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124631	TTS	754	Fluid	11821				5			JR
224635	TTS	7002	NP-9-5	118				4			CP
324632	Baker	379	Water oil	118				4			CP
424637	Andrews	7356	Re Wash	117				5			JR
524636	Tideport	2005	Kerosene	1184				5			JR
624604	Team	822	Trans. fluid	118				3			ST
724629	Tideport	1042	JP-8	1184				5			JR
824640	TTS	850	MARFOAM	118				3	N/C		ST
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CES Tankwash Report

Shift 1
 Date 6-24-09
 Leadman Anna
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24616	JTS	693	500 G0-1P					4			CP
2	24628	Andrews	5070	Calcium Stearate	11815				5			SR
3	24603	Andrews	7356	Resin	11818				3			ST
4	24617	JTS	2043	Seal UP	11818				4			CP
5	24619	CE S	234	Waste water	118				5			SR
6	24620	Bullseye	30224	Crude oil	118				5			SR
7												
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CES Tankwash Report

Shift 2
 Date 6-22-09
 Leadman Luis

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124528	Andrews	5070	Coke st. waste		15			5		11-C	B
224527	Texas oil	8162	petro Naphtha	8-11				3			J.E
324529	ITS	2044	POLYMER	8-11				3			J.E
424531	ITS	6201	Lube oil	8-11				3			J.E
524530	ITS	1T 707	Xylene mixer	8-11				4			ST
6											
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CES Tankwash Report

Shift 2nd
 Date 6-30-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24687	Firebird	323	Aromatic Hydro	8-11				3			JE
2	24693	ITS	6001	Glycol	8-11				3			JE
3	24681	Team	785	Browning grease	8-11				3			JE
4	24691	ITS	6508	KOH	8-11				4			ST
5	24698	ITS	2041	glycol	8-11				4			JL
6	24695	CES	228	W. Water	8-11				4			JL
7	24692	ITS	15-942	W. Water	8-11-12				5			B-H
8	24699	ITS	2043	Triethanolamine	8-11				5			B-H
9	24688	ITS	7002	Water treatment	8-11				5			B-H-JL
10	24682	Tideport	T-448	E. Ther	8-11				5			B-H-JL
11	24696	ITS	755	Acetate	8-11				3			JE
12	24694	CES	233	W. Water	8-11				4			JL
13	24704	Firebird	344	Wax	8-11				5		n/c	B-H-JL
14	24686	RHR	24686	Hyd Water	8-11				4			ST
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CES Tankwash Report

Shift 1

Date 6-22-09

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24667	Tideport	917	JP-8	118				3			AK
2	24655	CES	105	close 1 Sudge	11818	55 gal			3			AK
3	24645	JTS	6507	Polymer	11818				5		CP	JK
4	24669	CES	409	oil/water	118				4			CP
5	24668	CES	400	Base Oil	118				5			JB
6	24525	Dana	1564	HDI Set-up	1118				3	N/C	AK	SI
7	24670	JTS	6503	Detergent	118				5			JK
8	24672	Williams	17	Oil/water	118				4			CP
9		CEC	TOTE	#4	11816				4			CP
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CES Tankwash Report

Shift 2nd
 Date 6-19-9
 Leadman DL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24513	ITS	6901	DOT 3 Brake Fluid	8-11-				4			JL
2	24514	ITS	7002	Brake Fluid	8-11-				4			JL
3	24506	Team	402	Polymer	8-11-18				4			JL
4	24509	ITS	707	Brake Fluid	8-11-16				3			JE
5	24508	ITS	693	glycol	8-11-16				3			JE
6	24507	ITS	6301	mineral oil	8-11-16				3			JE
7	24501	Tidepo	3015	Lube oil	8-11-12				3			JE
8	24492	Petro	222	Cutlers Tool	8-11-18	4 Drums			5		7/16	JE
9	24510	ITS	980	Polymer	8-11-16 + 8				3			JE
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CES Tankwash Report

Shift 1
 Date 6-19-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24480	JTS	155	Pump	118				3			AR
2 26196	MPC	6050	crude oil	118				3			AB
3	CKG	707C		118/16							CP
4 24503	JTS	154	Pump	118				3			AR
5 24503	JTS	6701	PCI-11	118				4			CP
6 24500	JTS	987	Potassium	118				3			ST
7 24492	Petro	222	cutter stock	118				3			SR
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ST

CES Tankwash Report

Shift _____
 Date 6-18-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24487	ITS	7003	used oil	1184				5			JR
2	24486	ITS	2042	Aselate	11716				4			CP
3	26196	M.P.C.	6050	Ext wash	1115				3			AR
4	24491	ITS	748	Pump oil	118				5			JR
5	24482	ITS	850	castor oil	119				5	N/C		JR
6	24483	SES	104	waste solids	1184	450 gal	R/O		4	N/C	AR	CP
7	24490	ch-chem Pac	2573	wax	118				3	N/C		AR
8	24493	Crossfeed	101	Re wash	11716				4		N/C	CP
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CES Tankwash Report

Shift 2nd
 Date 10-18-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 24494	ITS	6503	Lube oil	8-11-12-16				4			JL
2 24493	CrossRoad	101	Rinse After.	8-7-11				4			JL
3 24496	Team	747	Herbicide	8-11				5			B-H
4 24482	ITS	850	Lube oil	8-11-12-16				5			B-H
5 24498	ITS	8880	ACT-11	8-11-16				4			JL
6 24497	ITS	755	Lube oil	8-11-12-16				3			JE
7 24490	chem pack	2573	Steel Alcohol	8-11				3			JE
8 24495	CES	205	RED Resin	9-11-18	110 gals			5			BH-JL
9 24499	CES	233	W-water	8-11				5			B-H
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CES Tankwash Report

Shift _____
 Date 6-17-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior											
Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	CES	100	EXT wash	1114				5			JR
2	26186 Tideport	1021	JP-8	1184				5			JR
3	26161 Baker	21412	water Drilling	11816	500 gal		R10	3			AR
4	26193 Inner Plani	3348	lube oil Ad	11812				5			JR
5	CES	298	EXT wash	1114				3			AR
6	26195 Firebird	22	petroleum	118				5			JR
7	CKG	TOTE		11816				4			CP
8	26197 Bullseye	677	crude oil	118				5	11/10		JR
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CES Tankwash Report

Shift 2nd
 Date 6-16-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26191	Tideport	1024	Fuel oil	8-11				5			B-14
2	26189	Tideport	1071	Nuphthalene	8-11				5			B-14
3	26190	JAM	305	Diesel	8-11				4			ST-JC
4	26187	ITS	6508	Drake Fluids	8-11-16				4			ST
5	26188	Firebird	358	Feedstock	8-11				3			JE
6	26185	ITS	754	MEA	8-11-16				3			JE
7	26192	CBS	249	Caustic	7-11				3			JE
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CES Tankwash Report

Shift _____

Date 6-16-09

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26183	CE3	220	Toluene	11816				5			JK
2		CKC	TOTE						4			CD
3		CKC	TOTE						3			ST
4	26184	JTS	6301	Hexene	118				5			JTS
5	26185	JTS	754	MEK	117				3	A/C		SL
6	26189	TidePvt	1071	SP-8	117				5	A/C		SR
7		CE3	391	Ex Wash	1114							AIR
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CES Tankwash Report

Shift 1

Date 6-15-99

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26032	Trimac	49-6783	scrub latex	11818				3	N/C		ST
2	26030	KMC	E-2	N/A misc organic	11816				4			CP
3	26154	Petro	1991	crude oil	118				5			J.R.
4	26159	Tideport	3009	huber oil	118				4			CP
5	26157	CF-S	228	waste water	11816				5			J.R.
6	26171	Tideport	1073	JP-8	1184				4			CP
7	26172	TS	761	Glycol	1187				5			J.R.
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CES Tankwash Report

Shift 2nd
 Date 7L
 Leadman 6-15-9
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26178	ITS	7002	Spec Acid	8-11-16				3			JE
2 26176	ITS	755	Glycol	8-11-16				3			JE
3 26032	Tramac	49673	Latex	8-9-18				3			JE
4 26180	LEES	955	Fatty Acid	8-11				4			JL
5 26175	ITS	6503	ETNylene glycol	8-11-16				4			ST-JL
6 26158	CES	NB 2507	NH Sludge	8-11-16	110	5		4			ST
7 26179	ITS	7002	Polymer	8-11-18-16				5			B-H
8 26174	ITS	6901	Bio Base	8-11-16				5			B-H
9 26181	ITS	3396	Lube oil	8-11-12-16				4			JL
10 26177	ITS	3392	Glycol	8-11-16				5			B-H
11 26182	ITS	982	DYNALene	8-11-16				3			JE
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

CES Tankwash Report

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26167	DAIT	DC5FG	Carbon	8-11				4			DL
2	26162	ETS	075	n/H Reg.	8-11-16				3			JE
3	26155	Tideport	1605	JP-8	8-11				4			DL
4	26170	ITS	2043	Alumom	8-11-16				3			JE
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GES Tankwash Report

Shift 2nd
 Date 6-12-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26169	Firebird	1024	Esler P. tch	8-11	10			5			B-H - JL
2	26150	Tieport	3010	Ext. only	15-18				3			JL
3	261											JL
4	26168	Firebird	5607	Patty Acid	8-11	16			5			B-H - JL
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CES Tankwash Report

Shift _____
 Date 6-12-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26034	ITS	942	JEFFCOAL	118				5			JTC
2 26085	CE S	243	Red Resin	118/18				4			CP
3 25948	ITS	7003	Benzaflex	118				5			JB
4 26083	Baker	24072	WASIO	118/16				3			SI
5 25949	CAS	70132	POLYOLS	118				4			CP
6 23042	Chem Pak	2554	WAX	118				5			JK
7 26153	ITS	6508	GLYCOL	118				4			CP
8 26032	Trimal	49-6213	SEI CO ² latex	118				3	N/C		SI
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CES Tank Wash Report

Shift 2nd
 Date 6-11-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126164	Belo	10	Empty drum	4-11				4			JL
270160	Chem Pack	2799	crude oil	8-11-12				4			ST
326146	I.T.S	8880	Bio Diesel	8-11-10				3			JE
426154	Petro	1991	crude oil	8-11				5		n/c	JB-41
526030	Kmed	E-2	misc organic	8-11-12				4		n/c	JL
620032	Trimac	44-673	Latex	9-11				3		n/c	JE
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CES Tankwash Report

Shift _____
 Date 6-11-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26081	ITS	2042	Polymer	11818				4			CP
2	26251	CES	210	Methanol	118				5			SR
3		Trimac	48-1015	Setup Latex	1118				3	N/C		ST
4	26086	CES	25109	Waste Solids	11816				5			SR
5	26075	CES	2526	Sludge	11816				4			CP
6	26084	M.P.C	6308	Crude oil	118				5	N/C		SR
7	26047	CES	643	1/4 Sludge	118				3			SR
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CES Tankwash Report

Shift 2nd
 Date 6-1-9
 Leadman JK

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25978	Tideport	1048	Eastman	8-11				4			JK
2	25987	Tideport	876	Ext. only	18				5		n/c	JBH
3	25980	Kibsher T.	7034	Calcium	8-11				4			ST
4	25917	Tideport	1015	JP-8	8-11				3			JE
5	25979	Firebird	322	Fuel oil	8-11				3			JE
6	—	CKG	Notes 3		8-11-1/4				3			JE
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CES Tankwash Report

Shift 2nd
 Date 6-2-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25999	CBS	221	W. Water	8-11				4			JL
2 25996	CBS	409	Oil water	8-11				3			JE
3 25997	CBS	222	Base oil	8-11-12				5			B-H
4 25998	CBS	271	W. water	8-11				5			B-H
5 25995	Petro Exp.	977	W. water	7-11				3			JE
6 25922	Dart	2 Totas	Carbon	8-11-16				5			JL
7 25994	Petro Exp.	1206	Lube add.	8-11-12-16				4			JL
8 25926	Baker VOR	31388	Waste Soil	8-11-16				3			JE
9 25984	Tideport	1501	oil	8-11				5			B-H
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CES Tank Wash Report

Shift _____
 Date 6-2-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25937	Tide Power	11-976	Re wash	11/6/8				5			SR
2	25908	Alteira	T-82	Pre-Rinsed	11/6/8				3		AS	SL
3	25918	Bullseye	787	crude oil	11/8				5			SR
4	25938	Andrews	5095	Re wash	11/7/6				1			CP
5	25919	CES	264	oil/water	11/8				3			AR
6	25983	Global	81T-2	oil/water	11/8				4		SR	CP
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CES Tankwash Report

Shift 1
 Date 6-3-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125998	CES	271	waste water	118				3			ST
226002	CES	234		118				5			SK
326003	CES	222	oil & water	118				5			SK
425985	Baker	23132	fire water	11812				3	N/C		ST
525920	Firebird	347	Base oil	118				5			SK
6	C/KG	TOTC		11816				4			CP
726004	TEXAS	5893	Petr. Naphtha	118				5			SK
826005	Enviro	102	oil & water	11818	3-Drums			4	ST		CP
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CES Tankwash Report

Shift 2nd
 Date 6-5-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26009	ITS	3392	Propanic Acid	8-11				4			JL
2	26010	ITS	6503	Glycol	8-11				4			JL
3	26008	ITS	965	Anglameal	8-11				5		n/c	B-H
4	26007	ITS	27850	N/H Waste	8-11				4			JL
5	25940	CES	1426	Waste Sludge	8-11-16-18				4			JL-B-H
6	26006	CES	72563	Methanol	8-11-16				5			B-H
7	25985	Baker	SV231321	Firewater	8-11-12				3		n/c	JE
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CES Tankwash Report

Shift 2nd
 Date 10-4-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24017	CBS	N34854	N/H Solids	8-11-16				4			ST
2	24022	CBS	N5268	N/H Solids	8-11-16				4			JL
3	25737	CBS	607	Regulated Waste	8-11-16				2			JP
4	25924	Baker	RDR2764	N/H Solids	8-11-16				3			JE
5	26023	Enviro S.	102	oily sludge	8-11-18	110 drums		C/P	4			BH-JL
6	26026	Dart	4276	Carbon	8-11				3			JE
7	26018	ITS	6901	Chlorhydrate	8-11-16				4			BH-JL
8	26024	ITS	6901	Glycol	8-11-16				4			BH-JL
9	26025	CBS	256	Resin	9-11-				3		n/c	JE
10	26011	Tramac	49635	Latex	9-11				5		n/c	BH-JL
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GES Tankwash Report

Shift _____
 Date 6-4-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125985	Baker	23132	Exxon water	118				3			S.I.
226012	ITS	2044	Poly Glycol	118				4			C.P.
326008	ITS	965	Angiame	118				5			J.R.
426015	ITS	754	Glycol	11				5			J.R.
526013	ITS	767	Tube oil	11128				3			S.I.
626014	Kchem Pak	2697	Geopent-776	118				4			C.P.
726011	Trimac	496735	Seal up latex	1118				5	At 10		J.R.
825921	Q.C.	69278	Solvent	11T				4			C.P.
926016	CLS	104	Oil y water	114				4			C.P.
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CES Tankwash Report

Shift 2nd
 Date 6-5-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26055	ITS	LT 707	NP 9	8-11-16				4			ST/JL
2	26038	ITS	3392	glycol	8-11-16				3			JE
3	26040	ITS	987	E 6	8-11-16				4			JL
4	26037	ITS	761	Lube oil	8-11-16				4			JL
5	26042	ITS	2563	ethylene glycol	8-11				3			JE
6	26011	Trynac	499-6335	Latex	9-11				5		n/c	B-H
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CES Tankwash Report

Shift 1
 Date 6-5-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126025	CES	256	Resin	11818				3			ST
22598	Andrews	5065	Re wash	11714				4			CP
326011	Trimac	496735	set up water	11188				5	N/C		JB
426019	CES N	36090	N/H Solids	118				4			CP
526008	ITS	850	Ext wash	1115				3			ST
626027	ITS	6508	citric Acid	118				4			CP
726028	Baker	688	Ext wash	1114				3			ST
826029	ITS	7002	TerGITOL	118				4			JB
926020	Q.C.	7337	N-methyl-2	1148213				3			ST
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Shift _____
 Date 6-6-09
 Leadman Armando

(254)

1941 CES Tankwash Report

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26043	PETRO	1318	61401	118				3			AR
2	26044	TTS	677	DCI-11	11716				4			CP
3	26044	Trimac	49-6735	SETUP	118				5			JR
4	26048	K1 Chem Pac	21661	WAX	118				3	N/L		AR
5	26050	TidePort	1077	JP-8	1184				4			CP
6	26050	TidePort	1050	JP-8	1184				4			CP
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CES Tankwash Report

Shift 1
 Date 6-8-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26052	TidePort	1049	TP-8	1184				4			C.P.
2 26048	KL Chem Park	21-661	WAX	118				3			A.R.
3 26053	TEPPCO	946079	crude oil	118				4			C.P.
4 26036	CES	2224	class 2-solids	118 16				3			J.R.
5 26101	CES	252	waste water	118				3			A.R.
6	CES	100	Ext Wash	1114				3			A.R.
7 26100	Inner Plant	5050	Infinium	118				5			J.R.
8 25856	Romax	Strainer	Baskets					4	N/C		C.P.
9 26105	CES	222	Base oil	118				3			ST
10 26103	JTS	6301	vinyl Acetate	117				5			J.R.
11 26049	Bullseye	1952	crude oil	118				3			ST
12 26107	TidePort	44050	lube oil	118				5	N/C		J.R.
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CES Tankwash Report

Shift and
 Date 6-8-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26126	PetroExp.	1200	Lube oil	8-11-12				4			ST
2	26123	Hurt	109	Diesel	8-11				5			B-11
3	26110	Tideport	3007	JP-8	8-11				4			ST
4	26122	CRS	205	Resin	9-11-66-18				2			JP
5	26108	ITS	982	Spec Acid	8-11-16				3			JE
6	26124	ITS	6503	Propionic Acid	8-11				3			JE
7	26127	ITS	2043	Glyco 1	8-11-16				3			JE
8	26125	ITS	2044	Amino Carb	8-11-16				4			JL
9	26130	ITS	9105	Ammine	8-11				4			JL
10	25856	Romax	Strainers		18				4		N/C	B-H
11	26129	ITS	28880	Polymer	8-18				5		N/C	B-H
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GES Tankwash Report

Shift 1
 Date 6-9-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26129	ITS	8880	Polymer	11818				5			JK
2 26856	Romax	6	Strainer Resin	11818				4			CP
3 26131	Inverplant	5621	Detergent	118				3			AR
4 26134	Petro	1318	Lube oil	118				5			JK
5 26111	ITS	4722	TPA	117				5			JK
6 26135	Firebird	T-322	Fuelstock	118				5			JK
7 26137	CES	270	wastewater	114				4			CP
8 26132	CES	RB 1207	N/H Soling	118/16				3			AR
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 STUCK

CES Tankwash Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

2nd
6-9-9
SL

2043

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26041	CBS	48464	NH Solids	8-11-16					4		B-H
2	26036	CBS	NB 259	NH Sludge	8-11-16				5			JL
3	26116	ITS	6509	Diesel	8-11-16				4			ST
4	26115	ITS	6901	Brake Fluid	8-11-16				3			JE
5	26114	ITS	7002	Nitrogen Pad	18				2			JP
6	25856	Romax	1	Strainer Basket	12-8				4			B-H
7	26141	Texas oil	8102	Naphla	8-11				5			JL
8	26109	ITS	6503	Acid	8-11-				5			SL
9	26121	CBS	2224	NH Solids	8-11-16				3			JE
10	26142	CBS	104	Waste Sludge	8-11	110 gal's			4			ST
11	26120	ITS	LT-793	Leather	8-11-16				3			JE
12	26119	Hurt	109	Air Freeze	8-11				3			JE
13	26139	Global	ST-2	oil/water	8-11				5			JL
14	26144	CBS	409	W. Water	8-11				3			JE
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CES Tankwash Report

Shift 2nd
 Date 6-10-9
 Leadman JK

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26087	ITS	7202	Estel	8-11-16				4		ST-JL	
2	26052	Dart	55Fg	carbon	8-11				3			JE
3	26017	CBS	2565	class 1 sludge	8-11-16				3			JE
4	26079	ITS	6509	spec Acid	8-11-16				4			JL
5	26074	CBS	6006	Waste Sludge	8-11-16				4			ST
6	26078	Team	402	choline	8-11				4			ST-JL
7	26149	ITS	6701	Bio Diesel	8-11-16				3			JE
8	26080	ITS	8044	Brake Fluid	8-11-16				4			JL
9	26071	ITS	TS-850	Bio Diesel	8-11-16				3			JE
10	26082	CBS	VB-2507	class 1 sludge	8-11-16				4			JL
11	26075	CBS	VB-2526	class 1 sludge	8-11-12				5		n/c	B-H
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CES Tankwash Report

Shift 1
 Date 6-10-09
 Leadman Armando

271

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26133	ITS	1266	Fatty Alcohol	118				5			JR
2 26112	CES	25-002	N/H Solids	118/16				4			CP
3 26102	CES	20-02	N/H Solids	118/16				3			SI
4 26118	Innerplant	5666	Base oil	118				4			CP
5 26145	Andrews	1251	Re wash	118				5			JR
6 26128	CES	25-009	class 2 Solids	118/16				3			SI
7 26106	CES	25112	N/H Solids	118/16/18				4			CP
8 21934	Chem Pack	2596	PEG-1450	118				5			JR
9 26076	CES	271	W/W	114				3			SI
10 26146	Bullzeye	30217	crude oil	118				5			JR
11 26117	Bybird	324	base oil	118				4			CP
12 26148	Tideport	1042	JP-8	118/21				5			JR
13 26117	CES	2565	Solids	118				3	NK		SI
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CES Tankwash Report

Shift 2nd
 Date 5-30-9
 Leadman JK

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125863	Tideport	LT 971	End ^{80FF}	16-18-11-8				4			CP-JL
225941	Kisher	6702	Polymer	8-11-18				4			JL
325929	Weatherford	SN103387	n/h liquids	8-11-16				3			JE
425935	Equislar	VR 31399	Waste Solids	8-11-16				5			ST-PH
525933	TTS	6301	Passivation	3-11-21				5			ST-PH
625943	CES	234	odywater	8-11				4			JL
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EPAHQ011000577

CES Tankwash Report

Shift 1
 Date 5-29-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25936	CES	256	waste water	114				3			AR
2	25910	Baker	26444	crude oil	1128				5	N/C		JB
3	25863	Tideport	4-971	Buffer	1118				4	N/C		CP
4	25937	Tideport	4-976	Buffer	1118				3			S.T
5	25939	MPC	816	Base oil	110				3			S.T
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EPAHQ011000578

CES Tankwash Report

Shift 2nd
 Date 5-29-9
 Leadman DL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25910	Baker	SV26494	crude oil	8-11-12	16-18			5			JR-ST-OK
2	25941	Kisher	6702	Polymer	8-11-12				4		n/c	JL
3	25909	Firebird	slop tank	oil	8-11-12				3			JE
4	25876	Tideport	1051	Solvent R					3			JE
5	25931	Retro	688	Lube oil	8-11-12				3			JE
6	25863	Tideport	971	Extonly	16				4		n/c	JL
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CES Tank Wash Report

Shift 1
 Date 5-28-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125910	Baker	26494	crude oil	11128				5	N/C		JR
225871	Baker	29235	crude oil	11128				4			CP
325621	CKC	TOTE		11810				3			ST
425867	Firebird	318	Petroleum Dis.	118				4	N/C		CP
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CES Tankwash Report

Shift 2nd
 Date 5-28-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
120776	CES	205	Resin	9-11-16	110 ^{gals}			3			JE
225934	Equistar	VOR29374	Waste Soil	8-11-16				3			JE
325925	Equistar	VOR31398	Waste Soil	8-11-16				4			JL
425910	Baker	SV264944	crude oil	8-11-12-16				5		n/c	BH
525932	CES	201	wastewater	8-11				3			JE
625867	Fire Bird	318	Petro dist	8-11				4			JL
725923	Phonex	VT-1	oil/water	8-11-18	150 ^{gals}			4			JL
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CES Tankwash Report

Shift _____
 Date 5/27/09
 Leadman JAMES PHARMS
 Record all heels to the nearest half gallon.

(1)

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25761	CES	629	w/H Solids	8-11-16				2			SP
2 25914	CES	233	w/water	8-11-16				5			SR
3 25870	CES	RB31250	RT CRUDE	10-18-11-16				5			SR
4 22534	CKG	Tobas	-19-	8-11				2002			SP
5 22515	CKG	Tobas	-57-	8-11				2			SP
6 25872	EM40 (Baker)	8MX23671	CRUDE	12-8-11							
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EPAHQ011000582

CES Tankwash Report

Shift 2nd
 Date 5-27-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25872	Baker	FMX23671C	crude oil	8-11-12-14-18				4			JL
2 25864	Firebird	354	mix organic	8-11				3			JE
3 25862	CES	205	W/H waste	8-10-16-18				2			JP
4 25915	Petro	688	Feed Stock	8-11-12-16				3			JE
5 25916	CES	235	Acetate	7-11-16				5			JL
6 25875	CES	249	W-water	8-11				5			ST
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CES Tankwash Report

Shift _____
 Date 5/26/11
 Leadman James Dharz
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25977	Tideport	1084	solvent R	8-11	—	—	THREE AM	3	6:00	8:10	ST
2 25903	CES	223	oily water	12-8-11-11	45	Rec	—	4	5:00	8:30	CP
3 25860	Andrews	1800	Rinse after Ins	7-11	—	—	—	3	8:05	9:25	ST
4 25952	BAKER	SV 26447LM	Crude o.i.	12-8-11	35	—	—	5	5:00	—	JR
5 25958	Petro Exams	LT-1358	Lube oil	—	—	—	—	—	9:30	—	—
6 25959	CES	243	WASTE WATER	8-11	101	—	—	4	8:45	11:30	CP
7 25872	BAKER	FMX 230 712	Crude o.i.	12-8-11-11	—	—	—	4	4:10:45	—	CP
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CES Tankwash Report

Shift 2nd
 Date 5-26-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25870	Baker	AB31250H	crude oil	8-11-12				5	n/c	ST	ST
2 25906	Baker	SV26465	W/soot water	8-11				3			JE
3 25872	Baker	FMS23671	crude oil	8-11-12	78	35	Sab	4	'	n/c	TL
4 25913	CES	271	W. Water	8-11-12				3			JE
5	Phoenix	VT-7	Ext. only	14				5			JE
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CES Tankwash Report

Shift 1
 Date 5-22-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125968	Andrews	1884	Re wash	11716				3			ST
225952	Baker	26497	crude oil	1128				5	NIC		J.P.
325974	Dynamic	ET 506	sand water	118				4			C.P.
425972	CES	222	Black oil	21818	100 gal. R/O			3			ST
5	C/KC	Tote		11810				4	NIC		C.P.
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CES Tankwash Report

Shift 2nd
 Date 5-22-9
 Leadman TL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25975	The Hart	109	Diesel	8-11				3			JE
2 25907	CLS	625	For the pages	8-11				2			JE
3	CKG	4	to leg	8-11-16				4			JE
4 25952	Baker	5126497	Ende oil	8-11-12				5		n/c	JE
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CES Tankwash Report

Shift 1
 Date 5-21-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125672	Q.C	76461	set up	1181811				3			AR
215904	CES	254	Base oil	118				5			SR
315952	Baker	26497	crude oil	11812				5	N/C		J.B.
415965	Tidepon	1050	Flam. Liquid	1184				4			C.P.
515967	Tidepon	1051	Flam. Liquid	1184				4			C.P.
615966	CES	416	waste water	118				3			SR
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CES Tankwash Report

Shift 2nd
 Date 5-19-91
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25902	Texas Oil	7158	Cutter Stock	8-11				3			JE
2	25953	Tideport	976	Naphthalene	8-11				3			JE
3	25901	Bullzeye	679	crude oil	8-11-12				4			JL
4	—	CES	283	Ext only	14				4			JL
5	—	CES	252	Ext only	14				4			JL
6	—	CES	273	Ext only	14				5			JE
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CES Tankwash Report

Shift 1
 Date 5-19-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125897	CES	243	wastewater	114				4			CP
225896	Leels	2785	Resin	118				5			J.R.
325892	Baker	3123	soda Ash	118				4			CP
425894	Baker	3252	soda Ash	118				5			J.R.
525850	Speedy	30	Polymer	11818				3			SI
625898	Baker	TP4040	sulfuric Acid	118				5			J.R.
725901	Bullseye	679	crude oil	118				4	N/C		CP
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CES Tankwash Report

Shift

Date

Leadman

2nd

5-20-9

JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25622	Q.C	70461	HPVP	9-11-0	18			3		N/C	JE
2 25463	Dynamic	FT501	Sanitizer	8-11	150 gal			5			JL
3	OES	419	W. Water	8-11				4			JE
4 25964	OES	221	Methanol	8-11	250 gal			4			JL
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CES Tankwash Report

Shift 1

Date 5-20-09

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125954	Ka chem Pac	21657	WAX	11.8				5			J.R
225955	CES	241	waste water	11.8				4			CP
325956	chem Pak	543038-9	WAX	11.8				5			J.R
425961	TEPRO	683	crude oil	11.8				5			J.R
525960	CES	209	Base Oil	11.8				3			AR
6	C/K G	TOTE		11.8	11.8			4	N/C		CP
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51

CES Tankwash Report

Shift 2nd
 Date 5-26-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25848	CES	241	Red Resin	9-11	140 Sals			3			JE
2	25969	Refro	1028	Diphenylmethane	8-11				4			JE
3	25970	A One	230	Tote Sale								JP
4	25971	Witrans	102	Trans Flk	8-11				3			JE
5	25972	Baker S	12497	crude oil	12-11				5		n/c	ST
6		Dynamic	1506	oil	8-11				4		n/c	JE
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CES Tankwash Report

Shift 2ND
 Date 5-18-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125891	Pulido	2002	crude oil	8-11-12-18				3			JE
225900	CES	409	Feedstock	8-11-16				4			JL
325895	Petro	1028	black oil	8-11-12 3 rd hose				3			JE
425899	Global	1372	oil/water	8-11				4			JE JL
5	CKG	5 Totes		8-11-16				5			BH
625850	Speedy	30	Polymer	8-11				3		N/c	JE
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CES Tankwash Report

Shift 1
 Date 5-18-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25859	Global	9654	oil/water	11.8				5			JK
2	25890	Global	1381	oil/water	11.8				4			CP
3	25858	Global	1380	oil/water	11.8				5			JK
4	25891	Pulido	3002	crude oil	11.8				3	NIC		AR
5		C & G	TOTE		11.8/6				4-5		JK	CP
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CES TankWash Report

Shift 2nd
 Date 5-16-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25844	MPC	4002	crude oil	8-11				4			JE
2	25857	Texas oil	3169	crude oil	8-11				5			JE
3		CKG	Totes	5 Flam-1	8-11-16				3			JE
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CES Tankwash Report

Shift 2nd
 Date 5-15-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25855	Team	765	grease	8-11				5			TL
2 25854	Team	402	grease	8-11				3			JE
3 25849	M. PC	6062	crude oil	8-11				4		N/C	JE
4 25847	Pineville	MT-4	NH liquids	8-11-16				3			JE
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CES Tankwash Report

Shift 1

Date 5-15-09

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125844	CES	271	Hose 3-3"	3-2"				4			CP
225845	CES	254	Caustic	118				4			CP
325851	Global	BIT-2	Waste water	118				4			CP
425841	CES	243	Red Resin	118/18				3		AR	ST
525858	Q.C.	67682	Set up	118/18/10				5			JR
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EPAH0011000598

CES Tankwash Report

Shift 1
 Date 5-14-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125824	Andrews	1779	Pewash	117				5			JR
225887	CEJ	105	Ext Wash	1114				3			AR
325886	CEJ	2003	Ext Wash	1114				4			CP
425888	DAVT	2 TOTE	Carbon	114				3			AR
5	QOC	67682		118				5			JR
6	CEJ	10Tce		1186					N/C	N/C	CP
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GES Tankwash Report

Shift 2nd
 Date 3-14-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25889	Global	BTT-2	N/A Sludge	8-11				4			CR
2	25844	GES	271	Class 1 Sludge	8-11-10				3			JE
3	25843	GES	227	Black oil	8-11-10				4			CR
4	—	GES	242	Paint	18				4			CR
5	25841	GES	243	Red Resin	8-18				3		N/C	JE
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EPAH0011000600

CES Tankwash Report

Shift 2nd
 Date 5-13-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	CBS	4	Stainless fill totes	8-11-16					3		JL
2	CBS	281	Ext only	14					3		JL
3	CBS	295	Ext only	14					5		JL
4	CBS	2	Stainless fill totes	8-11-16					4		TR
5	CES/CKG	5	Totes Flam. liquid	8-11					5		JL
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CES Tankwash Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25877	Bullseye	682	crude oil	118				5			JK
2	25840	Baker	3172	caustic	118				3			AR
3	25837	Andrews	5061	Rewash	118/6				4			CP
4	25839	Andrews	1779	Red Resin	1118				5			JK
5	25883	Teppco	931804	crude oil	118				4			CP
6	25884	CES	234	caustic					3			AR
7	25833	CES	TOTE		118/6				4	N/C		CP
8	25885	DART	DC5	carbon	118				4		JK	CP
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CES Tankwash Report

Shift 1
 Date 5-12-09
 Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25379	Baker	2585	Slurry Oil	1118				4			CP
2	25378	Tidepon	W-971	Py par R	11812				5			JR
3	25772	25772 CES	254	C-61	1112818	3-Drums			3			AR
4	25774	Lee's	965	Tall Oil	118				5			JR
5	25827	Tidepon	T-547	solvent	118				5			JR
6	25773	chempak	761	wax	118				4			CP
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EPAH0011000603

CES Tankwash Report

Shift 2nd
 Date 5-12-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25880	Phoenix	RT-1	Oil/Water	8-11				5			JE
2	25879	CBS	3058	N/A Solids	8-11-16				3			JE
3	25877	Willzbye	482	Crude oil	8-11				5		n/c	CR
4	25881	Tideport	1050	Jet Fuel	8-11				5			CR
5	25878	Tideport	1051	Hovensa	8-11				5			CR
6	25879	Tideport	T-639	Rx-tal-R	8-11				3			JE
7	25882	CBS	229	corrosive/liquid	8-11				3			JE
8	—	CBS	280	Ext. only	14				4			JL
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CES Tankwash Report

Shift 1
 Date 5/11/09
 Leadman Amendo
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25802	Inner Plant	60114	Sulfurized oil	1118				5			SR
2		CES	2002	Ext Wash	1114				3			AR
3	25803	CES	410	Base oil	118				3			AR
4	25810	LEP'S	7285	Flux/Frother	118				3			JP
5	25801	LEP'S	1175	PARTICLES	118				3			JP
6	25838	FLX	630026	GP	1118/28				4	11/10		CP
7	25804	CES	234	G-61	1112188	1 Drum			5			SR
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CES Tankwash Report

Shift 2nd
 Date 8-5-11-10
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25838	FLX	THU630007-6	Grease	9-11-12-18				4			JL
2	25828	CES	QB0325294	N/A Solids	8-11-16				3			JE
3	25771	Phoenix	RT-1	oil water	8-11-16				3			JE
4	25825	Bulkhead	093	crude oil	8-11				5			CR
5	25382	Team	160	Brown Grease	8-11-16				5			CR
6	25380	Team	8091	Brown grease	8-11-16				3			JE
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CES Tankwash Report

Shift 1
 Date 5-9-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CEZ	284	Ext Wash	1114				3			AK
2	25798	CES	270	oil & water	11816				3			AK
3	25799	CES	209	methanol	118				5			AK
4		Flex	63007	Turbo Flex	11818				4	NLC		CP
5		CES	229	Ext Wash	11144				5			JR
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CES Tankwash Report

Shift 2nd
 Date 8-8-9
 Leadman TL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25797	Emiro	102	Flam. liquid	8-11-18	1105	C/P		5			CR
2 25799	Phoenix	27600	Oil Sledge	8-11-18	42			3			JE
3	Flex	63001-6	Turboflex	18				4		1/2	CR
4	CES	2000	Ext only	14				5			TL
5	CES	293	Ext only	14				5			TL
6	CES	291	Ext only	14				3			JE
7	CES	270	Ext only	14				3			JE
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CES Tankwash Report

Shift 1
 Date 5-8-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25836	CES	255277	N/H Solids	11816				5			JK
2	25791	CES	104	Water oil	11816				3			A.R
3	25792	CES	646	EXT wash	1116				4			CP
4	25790	CES	259	Black oil	11816				5			JK
5	25793	CES	290	EXT wash	1114				3			AR
6	25796	CES	287	EXT wash	1116				4			CP
7	25795	CES	298	EXT wash	1114				3			AR
8	27602	Phoenix	77638	oil x Sludge	11816				5			JK
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CES Tankwash Report

Shift 1
 Date 5-7-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25779	CES	100	EXT wash	1116				3			AR
2	25782	CES	282	EXT wash	1114				3			AR
3	25781	CES	108	EXT wash	1114				3			AS
4	25833	CES	TOTC		11816				4	ALL C		CP
5	25785	CES	264	WASTE water	118				5	NIC		CP
6	25787	CES	105	W-SLUDGE	118				3			AR
7	25783	FIRBIEV	6707	BLOCK ZINC	1176				3			AR
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CES Tankwash Report

Shift 2nd
 Date 5-7-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25785	CES	264	W-Water	8-11-10				5			JL
2	25786	CES	243	Red Resin	9-11				3			JL
3	25787	Phoenix	RT-1	Oil/Water	8-11				3			JL
4	25789	CES	409	Waste Sludge	8-11				5			JL
5	25788	CES	210	W-Water	8-11				5			JL
6	—	CES	646	Exp. only	14-11				4		n/c	CR
7	2	SUNCOAST	?	Oil Sludge	8-11-18	2 drums			3			CR
8	—	CES	Back Hole	Exp only	14				5			CR
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CES Tankwash Report

Shift 1
 Date 5-6-09
 Leadman Amende
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
12576	Tideborn	3106	solvent	1184				3			DR
22361	GKG	Tote		11816				4			DR
22281	GKG	Tote		11816				5			DR
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CES Tankwash Report

Shift 2nd
 Date 05-6-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25777	CES	233	Flam. liquid	7-11				3			JE
2	25834	Tripple B	16	Hoses	8-11				4			CR
3	25778	CES/Pineville	c2	Totes / poly tank	8-11				3			JE
4	---	CKG	---	Totes Flam.	8-11				5			JR
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CES Tankwash Report

Shift 2nd
 Date 5-5-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25775	Phoenix	RT-1	Oil + Water	8-11				4			JE
2	25831	Hurt	L6244	Diesel	8-11				5			CR
3	25830	Hurt	L0923	Diesel	8-11				3			JE
4	25820	Bulleye	674	crude oil	8-11				5			JE
5	25741	PSC	340	Ext. only	1/6				5			JE
6	---	EKG	Coles	3	8+11							
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CES Tankwash Report

Shift 1
 Date 5-5-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25812	Buque Exe	595	crude oil	118				5			JR
2	25764	PSC	340	N/H waste	118	8			3			SR
3	25818	Team	102	Talco	118				5			SR
4		G/S G	Toile		118	16			4			CP
5	25819	high	25	pine oil	118				5			JR
6	25820	Bull 2 ex	674	crude oil	118				5	N/A		JR
7	25823	Global	BIT-2	wastewater	118				4			CP
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CES Tankwash Report

Shift _____
 Date 5-11-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25770	Tideport	3006	Fuel Oil	1184				5			JB
2	25760	Dan A	690	Lube Oil	118				3		B	SI
3	25806	Innerplant	8181	Glycol	118				5			JB
4	25807	Innerplant	3106	Glycol	118				5			JB
5	25759	Andrews	1723	Re wash	118				5	N/C		JB
6	25809	Innerplant	7145	Dibutyl Hydrogen	118				4			CP
7		CKG	TOTE		118 1/2				4			CP
8	25764	PSC	340	M/H waste water	118				3	N/C	B.	ST
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CES Tankwash Report

Shift 2nd
 Date 5-4-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25810	Tideport	T-639	Eastman. R	8-11				5	5		SL-57
2	25811	Tideport	1048	E Solvent	8-11				4			SL
3	25813	Hurt	48040	Lube oil	8-11				4			SL
4	25754	Andrews	1723	Rinse After Ins	8-11-16				5			ST
5	25816	CES	235	W. water	8-11				5			CR
6	25817	CES	243	Red Resin	8-11	110 gals			4			SL
7	25808	CES	3057	Waste Solids	8-11-16				5			CR
8	25764	PSC	340	W. water	18				3		1/c	JE
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CES Tankwash Report

Shift 2nd
 Date 5-2-9
 Leadman DL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25760	Dana	690	BUFF	18				3		n/c	JE-JL
2	25769	CES	206	Naslenka	8-17				4			CH
3	—	CES	298	Ex only	14				4			CH
4	—	CES	278	Ext only	14				4			CH
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CES Tankwash Shift Report

Shift 2nd
 Date 5-1-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25765	MPC	630	crude oil	8-11				4			CH
2	25766	Baker	BF63367	oil	8-11-16				5			JL
3	25767	Andrews	1723	Wax	8-11				3			JE
4	25768	CES	227	Sulfur Organic	8-11-16				2			JE
5	25764	PSC	340	WMA w. water	8-11				3		n/c	JE
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CES Tankwash Shift Report

Shift 1
 Date 5-1-09
 Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25727	CE S	VB25224	waste sludge	11816				5			JR
2	25758	CE S	231	- oil	118				1			CP
3	25757	CE S	243	water waste	118				3			AR
4	25748	sludge	pump	sludge	1128				3			AR
5		C/KC	TOTE		11816				5			JR
6		R/KC	TOTE		11816				4			CP
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CES Tankwash Shift Report

Shift 1
 Date 4-30-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25749	Andrews	1254	Re wash	11816				4			CP
2	25753	Mollex	234	water organic	118				5			JR
3	25748	Sludge Pump		Sludge	118				5	N/C		JR
4	25754	CES	271	habe oil	118				3			AR
5	25756	Chem Pak	2798	wax	118				5	N/C		JR
6	25755	PETRO	372	Detergent	118				3			AR
7		GKG	TOTE						4			CP
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CES Tankwash Shift Report

Shift 2nd
 Date 4-30-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25755	Petro	732	3 Hoses	8-11				3			JE
2	25756	Chem pack	2798	Wax	8-11				5			JE
3	25724	CES	VB 25115	Waste slide	8-11-16-18	500	sn's		3			JE
4	25727	CES	VB 25224	waste slide	8-11-18	500	sals		4		N/C	CH
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CES Tankwash Shift Report

Shift _____
 Date _____
 Leadman _____

~~2nd~~ 2nd
 4-29-9
 JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25762	CBS	241	Resin	9-11-16	110 50 5			3			JL
2	25751	Dart	Tote 1	Carbon	8-11-16				5			JL
3	25751	Dart	Tote 1	Carbon	8-11-16				5			JL
4	25752	Baker	5026576	Crude oil	8-11-12-16				5			JL-LH
5	25748	Sledge pump	pump	Sledge	8-11-16				3		n/c	JE
6	25763	Tide port	3020	Eastman S.	8-11				4			CH
7	—	CF	298	Est.	14				4			CH
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CES Tankwash Shift Report

Shift _____
 Date 4-29-09
 Leadman _____

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25746	CES	222	Base oil	118				3			AR
2	25726	Andrews	1155	Rewash	117				3			AR
3	25748	Sludge Pump		Sludge	118				5	N/C		JR
4		CKG	TOTE		118				4	N/C		JRGP
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CES Tankwash Shift Report

Shift 2nd
 Date 4-28-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25738	CBS	007865		8-11-16				5			JL
2	25733	JAM	317	oil	8-11-12				3			JE
3	25738	CBS	007865		8-11-16				3			JE
4	25739	CBS	007855		8-11-16				3			JE
5	25741	CBS	007941		8-11-16				3			JE
6	25736	CBS	256	crude oil	8-11-12				3			ST
7	—	LES	Totes 3		8-11-16				4			CH
8	25742	CBS	227	Toluene	8-11				4			CH
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CES Tankwash Shift Report

Shift 6
 Date 4-28-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25731	CES	259	used oil	118				3			AR
2	25732	CES	228	Flam liquid	148				3			SI
3	25729	DETVO	1028	Feed stock	118				4			ST
4	25725	Firebird	326	crude oil	118				4			CP
5	25736	CES	256	crude oil	118				3	N/C		SI
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CES Tankwash Shift Report

Shift 1
 Date 4-27-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25375	CES	256	wastewater	118				1			A.B.
2	25605	CES	254	WAX	118/18				5			JR
3	25498	Andrews	1882	Rewash	118/16				4			C.P.
4	25723	TidePort	2005	JP-8	118/4				5			JR
5	25329	Baker	29782	Asphalt	11128				3			ST
6	22277	G/K G	117 17	Toile	118				4-5			JR C.P.
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CES Tankwash Shift Report

Shift _____

Date _____

Leadman _____

2nd
8-4-27-9
JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25725	Firebird	300	crude oil	8-11-				4			CH
2	25730	Tideport	1085	Solvent R	8-11				3			JE
3	25728	Global	BT-2	Crude oil	8-4-18				3			JE
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CES Tankwash Shift Report

Shift 1
 Date 4-25-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25376	Tidepon	1075	Diesel	1184	Release			4			CP
2	25377	Tidepon	1056	Diesel	1184				5			JR
3	25539	Dana	2509	Sludge	11816				4			CP
4	25373	Dana	2523	Sludge	11816				5			JR
5	25541	CES	2567	Sludge	11816				4			CP
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CES Tankwash Shift Report

Shift 2nd
 Date 4-24-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25372	Baker	VB29278	Asphalt	8-11-12-16				5			JE
2	25376	Tideport	1075	Diesel	8-11				4			C
3	25374	Dart	42	Carbon	8-11				5			JE
4	25605	CES	254	Wax	18	7 Drums			4		NK	JL-CH
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CES Tankwash Shift Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25722	CE3	105	wastewater	114				3			AR
2	24254	CE3	622	waste solids	118				3			AR
3	25370	CE3	104	waste water	114				5			JK
4	25536	Kirkor	6706	Toluene	117				5			JK
5	25537	chem park	543038	WAX	118				4			CP
6	25536	CAS	133	Resin	118				3			AR
7	25371	CE3	205	N/H W/W	114				4			CP
8	22282	CKG	14 Tote		118				4			CP
9	25366	CKG	12 Tote		118				5			JK
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CES Tankwash Shift Report

Shift

2nd

Date

4-22-9

Leadman

JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25617	Palm Exp.	1154	Blackoil	8-11-12				5			JE
2	25614	Texas oil	9726	Flamliquid	8-11				4			JL
3	25616	Texas oil	1077	Flamliquid	8-11				4			ST
4	25615	Phoenix	VT-1	Oil/water	8-11				5			JL-JE
5	—	CES	640	ext. only	15				5			JE
6	25618	CES	1021	Oil/water	8-11				4			JL
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CES Tankwash Shift Report

Shift 1
 Date 4-22-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25685	CES	256	Lube oil	11128				5			JK
2	25610	CES	105	waste water	118				4			CP
3		CES	255 8177		1118				3	N/K		SI
4	25612	CES	410	waste water	118				3			JP
5		CES	327	Ext wash	118				5			JK
6	25613	CES	271	Lube oil	118				5			JK
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CES Tankwash Shift Report

Shift 1

Date 4-23-09

Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CE3	100	EA Wash	11.5				3			ST
2	25619	CE3	8177	Rewash	11.8	14			3			ST
3	25497	CE3	406	oil/water	11.8				5			JR
4	25721	CE3	271	lighter	11.8				5			JR
5	25715	Enviro	225	oil/water	11.8				3			ST
6	25620	TidePort	1048	JP-8	11.8				3			ST
7	22237	CK6	TOTES						4			CP
8	25499	Inna Plant	189	Polyal	11.8				3	AV/L		AR
9	25501	CE3	642	N/A Solid	11.8				2			ST
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CES Tankwash Shift Report

Shift 2nd
 Date 4-23-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25507	CES	624	Waste Sludge	8-11-16				2			BL
2	25533	CES	870	Flam. liquid	8-11				3			JE
3	25532	CES	259	Wastewater	8-11				4			C
4	25531	CES	871	Oily water	8-11				3			JE
5	25529	Baker	RB29782	Asphalt	8-11-12-16				4			C
6	25528	Baker	RB31371A	Asphalt	8-11-12-14				5			JL
7	25499	Inner plant	189	Polyether	8-11				3			JE
8	25746	CES	256	Waste water	8-11				4			C
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CES Tankwash Shift Report

Shift _____
 Date 4/11/09
 Leadman Jaws

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25680	CES	231	WASTE WATER	8-11	—	—	—				JE
2	25720	Phenix	VT-1	oily water	8-11	—	—	—				MC
3	25673	CES	270	Light Ends	8-11	—	—	—				JP
4	25719	Bullz Eye	674	Crude o.i	8-11	—	—	—	4			MC
5	25679	WEE's	2285	Detergent	8-11	—	—	—	3			JE
6	25718	Tideport	3014	Detro. Dist	8-11	—	—	—	4			MC
7	25681	CES	104	oily WATER	8-11	—	—	—				JP
8	25683	CES	256	Lube oil Add.	8-11	—	—	—	4	Conduct		
9	25682	CES	209	water	7-11	—	—	—	4			JA
10	25684	CES	Totes	w/H waste	8-11				3			JE
11	25684	CES	8177	oily water	8-11				3			JE
12	25686	P.E	LT-1199	Feed Stock					3			JE
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(2)

CES Tankwash Shift Report

Shift

Date 4/20/09

Leadman James Thomas

Record all heels to the nearest half gallon.

(1)

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25677	Tideport	1043	Lube o.i	-12-	-	-	-	5			JR
2	25671	Rain 4 Rent	254747	Lube o.i	8-11	125	(Rec)		3			JP/BH/ST
3	25650	Andrews	1723	Rinse after	07-11	-	-	✓	5			JR
4	25676	Bullz Eye	598	Crude o.i	8-11	-	-	-	5			JR
5	25717	Team Trans	102	Crude	8-11	-	-	-	5	w/c		JR
6	25675	Chem Pak	2798	WAX	8-11-18	2-Prims	e/p		4			CP
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CES Tankwash Shift Report

Shift 2nd
 Date 4-20-09
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25674	Baker	RB31512RT		8-11-12-18				4			MC
2	—	CKG	8 totes		8-11-16				5			JL
3	—	CKG	8 totes		8-11-16				3			JE
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EPAHQ011000638

CES Tankwash Shift Report

Shift _____
 Date 4/30/09
 Leadman SANES

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25654	Tideport	1066	JPB	8-11	-	-	-	324	7:15		JP/CP
2	25631	CES	641	Petroleum motor	12-8-11-16				2			JP
3	22231	CKG (33)	Tobos		-	-	-	-	5			JR
4	25670	CES	410	Base oil	8-11	-	-	-	4			CP
5	25649	CES	271	271	8-11	-	-	-	5			JR
6	24402	CES	642	w/14 S.M.S	8-11-16	-	-	-	3			JP
7	25511	DANA	599	SET - UP	13-12-11-12-13	8	Transfer		4			CP/mc
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CES Tankwash Shift Report

Shift 2nd
 Date 4-18-9
 Leadman JK

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25666	RHR	23902	Diesel Fuel	8-11-12-16				4			ME
2	25714	LEES	1165	Bio Diesel	8-11				3			JE
3	25713	Tideport	1055	Solvent R	8-11				4			ME
4	25711	Tideport	T-639	Alcycate	8-11	2e wash			4			ME
5	25712	Tideport	1056	Combustible liquid	8-11				3			JE
6	25710	Tideport	1048	Solvent R	8-11				3			JE
7	—	CES	228	W. water	8-11-14				5			JK
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EPAHQ011000640

CES Tankwash Shift Report

Shift 2nd
 Date 4-17-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25665	Team	402	cholinechloride	8-11				84			mc
2	25668	Liquid	6065	Kerosine	8-11				5			JL
3	25664	R4R	276530	water	8-11-16				3			JE
4	25667	Petro	1206	YuBase oil	8-11-12				3			JE
5	25663	R4R	279108	Water	8-11-16				4			mc
6	25666	R4R	239032	Diesel fuel	8-11-12-14				84		n/c	mc
7		CES	235	Reelean	7-11				3			JE
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EPAHQ011000641

CES Tankwash Report

Shift 1
 Date 4-17-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 25658	CES	252	wastewater	118				4			CP
2 25658	Tidepon	2006	Re wash	118				5			SR
3 25660	CES	243	Base oil	118				4			CP
4 25659	chem Pak	21708	WAX	118				4			CP
5 25662	DISC	31241	DIRT	11816				3			ST
6 25661	Tidepon	3008	Solvent	1184				5			SR
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CES Tankwash Shift Report

Shift 2nd
 Date 8-4-16-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25704	Hurt	L8042	Dexron	8-11				5			JL
2	25706	Hurt	L6574	Gasoline	8-11				4			mc
3	25708	Hurt	L938	Diesel	8-11				4			mc
4	25707	Petro	372	GE-oil	8-11				3			JE
5	25653	Dart	42-FG	Carbon	8-11				3			JE
6	25655	CES	264	oil/water	8-11				4			mc
7	25656	CES	256	oil	8-11				5			JL
8	25657	CES	209	methanol	7-11				3			JE
9	—	CES	205	W. Water	7-11				3			JE
10												
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CES Tankwash Shift Report

Shift 1
 Date 4-16-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25694	CES	233	waste water	118				5			JR
2	25701	Petro	1206	Brake Fluid	118				5			JR
3	25697	RFR	254988	Rust water	118				3			AR
4	25702	Leels	985	Fatty Acid	118				5			JR
5	25667	CES	Filter	oil	118				5			JR
6	25703	CES	104	waste water	118				3			AP
7	25511	Doug	599	seal JAT	110				4	N/C		CP
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CES Tankwash Shift Report

Shift 1
 Date 4-15-09
 Leadman Armande

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25602	TidePort	1048	Solvent	4184				3			ST
2	25603	Baker	40575	Pre Rinsed	118				5			JR
3	25691	CES	416	Base oil	118				5			JR
4	25690	CES	213	Base oil	118				3	N/C		ST
5	25511	Dana	599	scrup TAT	118				4	N/C		CP
6	25693	CES	234	methanol	118				5			JR
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CES Tankwash Shift Report

Shift 2nd
 Date 4-15-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25692	RHR	254204	W/dmwd	8-11				4			MC
2	25593	Baker	SV24573	sewage	8-11-18	150	505		3			JE
3	25694											
4	25695	Baker	SV24072	Hydro Water	8-11				4			MC
5	25696	LEES	1175	Fatty Acid	8-11				5			mc/JL
6	25690	CES	213	Base oil	8-11-12				3			JE
7	25698	CES	271	W-Water	8-11-16				5			JL
8	25699	CES	270	base oil	8-11-12				5			JL
9	25700	CES	243	Red Resin	9-11	110	505		3			JB
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CES Tankwash Shift Report

Shift 1
 Date 4-14-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25599	R F R	254796	RC Wash	118				5			JR
2	25644	CES	8177	Sulfuric Acid	118				3	N/C		AR
3	25647	Lee's	2005	Paint Acid	118				5			JR
4	25602	Petro	1358	Tan Hex	118				3			AR
5	25646	Dart	42 F6	Carbon	118				3			AR
6	25571	Dana	599	Set up Tan	118				4	N/C		CP
7	25594	Baker	13035	D Caustic	718				3			AR
8	25608	CES	29254	N/A Solids	118/16				5			JR
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CES Tankwash Shift Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25644	CBS	8777	empty clean	8-11-10				3			JE
2	25604	CBS	463	Methanol	7-11-10				3			JE
3	25589	GI	#3	oil	9-11-12-18-Hoses				5			JL
4	25511	Dana	599	TOI	18				4		nk	mc
5	—	CBS	299	Ext only	14				3			OL
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EPAHQ0011000648

CES Tankwash Shift Report

Shift 2nd
 Date 4-13-09
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25600	LEES	1195	No Fuel	8-11				3			JE
2	25592	Bullseye	596	Crude oil	8-11-12	35	sub		5			JL
3	25597	Evergreen	T-905	Waste sludge	8-11				5			JL
4	25587	Petro Exp.	LT-608	Feedstock	8-11				5			JL
5	25590	CBS	205	Ethanol	8-14/16-18				3			ST
6	25595	Tideport	1050	SP-8	8-11				5			JL
7	25644	CBS	8177	Remash	7-11				3		n/c	JE
8	25511	Dana	599	TOI	18				4		n/c	me
9	25601	Petro Exp.	LT-1255	Corrosive Liquid	8-11				5			JL
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EPAHQ011000649

CES Tankwash Shift Report

Shift _____
 Date 4-13-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25577	CES	2512	N/A waste	118				3			AR
2	25571	Dana	599	SEI UP JAT	118				4			CP
3	25586	CAS	133	Resin	118				5			SR
4	25587	PETROL	688	Feed stock	118				5	N/C		SR
5	25590	CES	225	Ethanol	118				3	N/C		AR
6	25645	Leel's	2285	HydX - Acid	118				3			AR
7	25424	RFR	HQSC	Hxcolic oil	118				1			SP
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CES Tankwash Shift Report

Shift 1
 Date 4-11-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25582	Chem Pak	1941	Detergent	R-11	✓	✓	✓	5			JA
2	25584	PETRO	1154	lub oil	1128				5			JR
3	25585	CES	252	lub oil	1128				3			AR
4	25626	Phoenix	239325		118				4			CP
5	25583	TPPCO	93187	crude oil	118				4			CP
6	25347	Baker	26498	Red Diesel	118				5			JR
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CES Tankwash Shift Report

Shift 1
 Date 4-9-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25574	CES	241	waste water	114				3			A.R.
2	25548	Baker	24591	crude oil	1128/1816				5			J.R.
3	25511	Dan A	599	sel up TDI	1118				4	N/C		C.P.
4	25640	R.F.R.	254549	Hydro Carbon	118				3			A.R.
5	25642	CES	641	C-61	11812/1618				2			J.P.
6	24329	Baker	23253	waste water	118				3	N/C		A.R.
7	25578	Dan	5-FG	carbon	118				5			C.P.
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CES Tankwash Shift Report

Shift 2nd
 Date 4-9-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25581	Enviro	603	Flam. Solids	8-11-12	3 drums			5			JE
2	25580	CBS	256	Caustic	8-11-12				5			JE
3	24329	Baker	23253	Shrimp oil	8-11-12				3			JL
4	25626	RUR	239325	n/a waste	8-11-12				4		n/c	me
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CES Tankwash Shift Report

Shift 2nd
 Date 4-8-9
 Leadman DL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25642	CBS	233	N/A Waste	8-11-16				4			MC
2	25641	Baker FM	227996	Drilling Fluid	8-11				3			DL
3	25639	Tideport	1071	Exp. only	16-18				4			MC-CP
4	25635	CBS	209	W. water	8-11				3			JE
5	25633	CBS	0T-2548	N/A waste	8-11-16				2			GR
6	25636	Global	5T-2	Oil/water	8-11				4			DL MC
7	25511	Dana	599	TBT	8-11				4			MC
8	25575	CBS	271	Methanol	8-11-16				3			DL
9	25596	CBS	200406	W. Water	8-11				4			MC
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CES Tankwash Shift Report

Shift _____
 Date 4-8-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25630	Tideport	1056	JPR-8	1184				4			CP
2	25632	JHM	313	Lube oil	11128				3			AR
3	25639	Tideport	1071	Ext wash only					4	N/C		CP
4	25634	Petro	1318	614601					3			AR
5	25548	Baker	24591	crude oil	1112818				5	N/C		JR
6		CES	100	Ext wash	1114				3			AR
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CES Tankwash Shift Report

Shift 2nd
 Date 4-7-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25469	RUR	837	Hoses 100	8-11				4			MC
2	25428	Tideport	1048	JP-8	8-11				4			mc
3	25638	RUR	241094	Dirty water	8-11				4			mc
4	25625	CES	228	C-101	8-11-12-18				3			JE
5	25629	CES	204	Oil	8-11				3			JE
6	25627	Chem Pack	21-708	Crystal PEP	8-11				4			mc
7	—	CES	206	W. Water W. Water	8-11				3			JE
8	25548	Baker	SV24591	Crude oil	11-12				5		n/c	JL
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CES Tankwash Shift Report

Shift 1
 Date 4-7-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25548	Baker	24591	crude oil	11128	6 1/2	Drums		5	N/C	A.R.	JR
2	25470	RFR	255076	wastewater	118				4			CP
3	25625	CES	228	C-61	1118				3	N/C		A.R.
4	25623	chempak	543142	wax	118				4			CP
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CES Tankwash Shift Report

Shift 2nd
 Date 4-6-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25483	RUR	245082		8-11				3			JE
2	25494	Hurt	26734	Gasoline	8-11				3			JE
3	25493	Hurt	28040	Diesel Fuel	8-11				34			MC
4	25495	CES	9 big 1 small	11-13-18					2			BHJR
5	24362	CES	LT-1244	61-Reclaim	8-11-				3			JE
6	25637	CES	400	W-waste	8-11				5			JL
7	25567	JAm	318	Lube oil	8-11-12				4			MC
8	25490	CES	7253	Methanol	8-11-18 3095			260	5			JL
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CES Tankwash Shift Report

7253

Shift _____
 Date 4-6-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125566	CES	276260	N/A Solids	1181216				1		CH	ST
225575	CES	267	Gasxwater	118				5			JP
325491	CES	265	Base oil	11816				5			JR
425490	CES	7253	methanol	118				5	N/C		JR
525481	RFR	260724	water Rust	118				5			JR
625567	JAM	318	lube oil	118				4	N/C		CP
725457	ITS	754	Plam. Liquids	11818				4			CP
825345	Baker	23700	oil slurry	112818	6 drums			3			AR
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CES Tankwash Shift Report

Shift 2nd
 Date 4-4-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25484	JAM	313	Oil	8-11-12				5			JL
2	25475	CBS	271	corrosive	8-11				3			JE
3	25480	RUR	245093		8-11				3			JE
4	25526	CBS	917	Alth Waste	8-11				4			ML
5	25345	Baker	Emp 23700	oil slurry	18				3		ML	JE-JL
6	25486	CBS	220	Feedstock	8-11-16				4			ML
7	25345	Baker										
8	25487	Repro	1358	Black oil	8-11-12				5			JE JL
9	25488	Global	BTT-2	oil & water	8-11				5			JL
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CES Tankwash Shift Report

Shift 2nd
 Date 4-3-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25485	CBS	2023	Only Water	8-11				5			JL
2	25478	RUR	254321	Mud Water	8-11				4			MC
3	25479	CBS	2815	W. Water	8-11-16				4			MC
4	25465	RUR	255758	Pipe line W.	8-11				5			JL
5	25465	RUR	- 202 265127	Sewage	8-11				5			JL
6	25457	ITS	754	Set up	9-11-18				3		MC	JE
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EPAHQ011000661

CES Tankwash Shift Report

Shift _____
 Date 4-3-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25476	CEJ	271	NITRIC Acid	114				3			AR
2	25477	CEJ	259	Sulfuric Acid	114	18			4			CP
3	25346	Baker	1191	Re wash	118				3			AR
4	25466	Baker	26077	Exxon firewater					5			JR
5	25465	R.F.R.	265727	Waste water	118	10			5	N/C		JR
6	25479	CEJ	2815	Waste water	118				4	N/C		CP
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EPAHQ011000662

CES Tankwash Shift Report

Shift _____
 Date 4-2-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25560	Batzex	672	crude oil	1128				3			AR
2	25555	RFR	255449	Glycerine	118				4			CP
3	25415	Andreas	1155	waste oil	11818				5			JR
4	25463	TEPPCO	946081	Crude oil	118				4			CP
5	25464	TEPPCO	945534	crude oil	118				3			AR
6	25472	Petro	592	rewash	118				4	N/C		CP
7	25471	Team	164	chofine	117				3	N/C		AR
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CES Tankwash Shift Report

Shift 2nd
 Date 4-2-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25563	CES	406	W. Water	8-11-16				3			JE
2	25474	Chem Pak	2794	BC-610	8-11				4			mc
3	25472	Petro	592	Rewash	16				4			mc
4	25501	JAM	313	Oil	8-11-12				3			JE
5	25473	Global	ST-2	sludge	8-11				4			mc
6	25467	R4R	255077	W. Water	8-11-16				5			JL
7	25471	Team	164	choline chlor.	8-11-7				3			JE
8	—	R4R	12450	mat Rewash	8-11				3			JE
9	—	CES	235	Phenol	7-11				4			mc
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CES Tankwash Shift Report

Shift 2nd
 Date 4-1-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25459	Phoenix	VT-1	Oil/Water	8-11				5			JL
2	25460	CES	259	Red Resin	9-11	110 5 ^{gals}			3			JE
3	25462	CES	271	W-Water	8-11				5			JL
4	25461	CES	419	Lube oil	8-11-12				3			JE
5	25555	RUR	255449	Glycerine	8-11-18	55 5 ^{gals}			4		n/c	MC
6	24364	Baker	GP7084	Sulfuric Acid	8-11				4			me
7	—	CES	7	Hoses	8				5			JL
8	25345	Baker	FMP23700	oil Slurry	18	2 Drums			5		n/c	JL
9	—	RUR	1 12x60	Reclean	8-11				3			JE
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CES Tankwash Shift Report

Shift 1
 Date 4-1-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25571	CES	233	methanol	118				5			JR
2	25304	Trimac	49-7540	SCI UP MDT	118				4			CD
3	25544	RFR	239385	waste water	118				5			JR
4	25550	RFR	255709	waste water	118				3			AR
5	25559	CES	640	C-61	118				1			JP
6	25455	E.S	102	oil water	118				5			JR
7	25454	Dart	5 F6	carbon	112				5			JR
8	25456	TEXAS	25572	Feed Stock	118				5			JR
9	25458	CES	406	Base oil	118				3			AR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-31-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25557	CBS	206	N/H Sol. Is	7-11				5			JL
2	25572	CBS	270	Feedstock	8-11	35 5 ¹⁵			3			JE
3	25569	JAm	271	Diesel	8-11				5			JL
4	25453	RHR	255014	W. Water	8-11				5			JL
5	25558	Team	747	Cloroxed line	7-11				3			JE
6	25554	Petro EXP.	LT-1199	Reclaim	8-11-16				3			JE
7	25421	CBS	206	Digout	18				2			BH-CH
8	25399	RHR	274321	Working Sol.	8-11-16				2			CH
9		Trimac		Setup MPI	18-8-11				2		n/c	mc
10	25527	Petro	LT-794	Feedstock	8-11-12				2			JE
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CES Tankwash Shift Report

Shift 1
 Date 3-31-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25448	Baker	1236	Re wash	11/28				4			CP
2	25352	CES	259	water & GAS	11/4				5			JR
3	25545	R.F.R.	253972	Sewage	11/8				5			JR
4	25396	Baker	1191	crude oil	11/17	8			3			AR
5	25568	CES	256	Feedstock	11/24				4			CP
6	25554	CES	104	N/A waste - W	11/8				3			AR
7	25453	R.F.R.	255014	waste water	11/8				5	N/C		JR
8	25346	R.F.R.	260282	waste water	11/8				4			CP
9		Baker	1236	Re wash	11/8				4			CP
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CES Tankwash Shift Report

Shift _____

Date _____

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25451	Team	102	choline chloride	7-11				4			MC
2	25452	MPC	814	Base oil	8-11				4			MC
3	25408	RUR	260143	Sewage	8-11				4			MC
4	25446	Valero	T-7193	Acz-waste	8-11-12-14				3			JE
5	25543	RUR	255040	Sewage	8-11				5			JL
6		CES	1264	I	8-11-16				5			JL
7	25551	CES	265	Light Ends	8-11				5			JL
8	25448	Baker	MY1236	Reelean	8-11				4		n/c	me
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CES Tankwash Shift Report

Shift 1
 Date 3-30-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25613	Baker	829	water & mud	118				4			CP
2	22489	Baker	3355	crude oil	1128				3			AR
3	25304	Trimac	49-7546	MDI seal	1118				5			JK
4	25449	Kirscher	6001	arborvitae	118				4			CP
5	25449	ChemPak	643038	9 wax	118				5			JK
6	25542	Team	163	Fatty Acid	118				5			JK
7	25450	Port	4	TOTOS	carbon	118			4			CP
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CES Tankwash Shift Report

Shift 1
 Date 3-28-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25521	JHM	319	lube oil	118				4			CP
2	25411	Baker	444	crude oil	1128				3			AR
3	25522	CES	256	waste water	118				5			SR
4	25579	Texas	6409	waste water	118				4			CP
5	25524	Tideport	3014	xtleyle	1184				5			SR
6	25418	CES	249	FATTY ALCOHOL	118				3			AR
7	25525	CES	295	PUMP	118				3			AR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-27-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25445	Firbird	346	Feed stock	8-11				4			mc
2	25419	Chempack	3 02-9	Rosin	8-11				5			JL
3	22521	Baker	P4299	Watermud	8-11				5			JL
4	25512	R HR	245087	Sulfuric Acid	8-11				5			JL
5	25367	R 4R	254298	Water & rust	8-11				4			mc
6	25411	Baker	mp474 SDC	crude oil	8-11-12-18				3		n/c	JE
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CES Tankwash Shift Report

Shift 1
 Date 3-27-08
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25517	Kirschner	6719	POLYMER	11818				3			AR
2	25443	CES	256	Red Resin	11816				5			SR
3	25368	Innaplant	775	Petroleum oil	118				5			SR
4	25302	The Huey	80418	Diesel	118				4			CP
5	25444	Global	SI-2	oil/water	118				5			SR
6	25306	hermaid	140	latex water	114				4			CP
7	25332	R.F.R	265543	water	11818				2			BH
8	25301	B SF	653675	Haz waste	118				1			JP
9	22488	Baker	1236	crude oil	11812				4			CP
10	25419	chempat	302-9	Resin	118				5	N/C		SR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-26-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25506	Tideport	1082	IPA	7-11				3			JE
2	25515	Kirshner	7025	Custofloat	9-11				3			JE
3	25508	Petro	736	G-5035	8-11				5			JL
4	25514	JAM	319	Lube oil	8-11-12				5			JL
5	25432	Baker	3010	SDL crude oil	8-11-12-14				3			JE
6	25504	Tideport	3014	Xylene	8-11				84			MC
7	25369	Tideport	1090	Fuel oil	8-11				5			JL
8	25503	Enviro	105	oil/water	8-11-18	7 Drums			5			JL-JE
9	25417	Firebird	SP8230	Feedstock	8-11				4			MC
10	25505	Phoenix	VT-1	oil/water	8-11				4			MC
11	25428	RHR	274818	N/H solids	8-11-16				2			BH
12	25516	CES	250	W. water	8-11				5			JL
13	22488	Baker	MD-12									
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CES Tankwash Shift Report

Shift 1
 Date 3-26-09
 Leadman Ramundo
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25441	Andrews	1887	Rewash	11816				31			CP
2	254102	Lee's	1165	THO oil	118				3			AR
3	25442	Chem Pak	543038	9 WAX	11816				5			JK
4	25304	Trimac	49-7540	M D J seal					5		NIC	JK
5	25431	Baker	3010	crude oil	11128				3	NIC		AR
6	25432	Baker	3010	crude oil	11128				3	NIC		AR
7	25434	Baker	741	crude oil	11128				4			CP
8	25416	Tide Pwr	3015	Fuel oil	1184				5			JK
9		Tide Pwr	3015	crude oil	118				5	NIC		JK
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CES Tankwash Shift Report

Shift 1
 Date 3-25-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25385	Champak	2596	WAX	11818				5			JR
2	25436	PETRO	794	TAV Hex	118				4			CP
3	24269	RFR	254266	CAUSTIC	11818				3			AR
4	25438	CES	213	oil	118				4			CP
5	25439	Leels	1165	Diesel	118				4			CP
6	25440	TidePort	T-547	Kasman Solvent	1184				4			CP
7	25450	TidePort	T-639	Napthalene	118				5	NK		JR
8	25407	TePPLC	93186	crude oil	118				4			CP
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CES Tankwash Shift Report

Shift _____

Date _____

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25413	CBS	259	Sulfuric Acid	8-11				3			JE
2	25430			Napthalene	8-11				5			JL
3	25410	CAS	129	Peppers	8-11				3			JE
4	25442	Chempack	543038-9	Alcohol Blend	8-11				5		n/c	JL
5	24242	Baker	P6835	Sulfuric Acid	8-11-18				3			JE
6	25409	Team	785	Choline	8-11				4			JL
7	—	Petro	1255	ReClean	8-11				4			JL
8	25											
9	25414	Petro	LT-736	Blackoil	8-11-12				4			JL-JE
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CES Tankwash Shift Report

Shift 1
 Date 3-24-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25313	PSC	1518	Asphalt	118	118			3			AR
2	25402	CES	259	oil/water	118				5			SR
3	25405	Innerplant	3348	Alcohol	118				4			CP
4	25406	Innerplant	189	Alcohol	118				5			SR
5	25422	Bullseye	675	crude oil	118				5			SR
6	25397	Petrol	372	wastewater	118				4			CP
7	25404	Chempak	8216	wax	118				3			AR
8	24380	CES	645	waste solids	118	118			3			JP
9	24244	CES	629	N/H solids	118	118			2			M.C.
10	24289	CES	636	N/H solids	118	118			3			AR
11	25426	CES	256	Resin	118	118			3			JP
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CES Tankwash Shift Report

Shift 2nd
 Date 3-24-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25427	Tideport	2T-971	NAPT Nalene	8-11				4			JPR
2	25423	PUR	241116	Hydraulic Fluid	8-11				3			JE
3	25425	CBS	264	Light Ends	8-11				3			JE
4	25431	Petro Exp.	1255	Lube oil	8-11-12				4			JPR
5	25435	CBS	259	Caust. C	8-11				3			JE
6	25308	Baker C	Oil		75-11				3			JE
7	25385	Chem Pack	2596	Wax	8-11-18	45 gals			5		nle	JL
8	25437	Petro Exp.	1206	Lube oil	8-11-12				4			JPR
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CES Tankwash Shift Report

Shift 1
 Date 3-23-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
125392	CES	409	oilwater	118				5			JR
225391	JAM	32	oil	118				4			CP
325306	RFR	274807	Solvent mix	118 1/2				1			SI
425395	Petro	1046	detergent	118				5			JR
525393	Tideport	1082	Fuel oil	118 4				4			CP
625323	Team	8091	amine oxide	118				4			CP
725313	PCS	1518	Asphalt	1118				3	N/C		AR
825337	RFR	259039	Amine	118				5			JR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-23-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25388	KUR	259513	Bio Diesel	8-11-12				4			JPR
2	25400	LEES	1075	Fuel Add	8-11				4			JPR
3	25313	PSC	1518	Asphalt	8-11-12-18				3		n/k	JE
4	25403	CES	241	Red Resin	9-11-16				5			JL
5	—	RUR	2	containers 12x10	Re Wash	3-11			5			JL
6	25401	CES	419	Light Ends	8-11				4			JPR
7	24378	BJ	2	Totes Tranquon	8-11-16				5			JL
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CES Tankwash Shift Report

Shift _____

Date _____

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17175	BAKER	P7297	Sulfur Ring	8-11				5			JR
2	17182	CES	270	Butyl Adh	08-11				4			LA
3	17186	Bullz Eye	201	Crude o.i	08-11				3			JR
4	24385	BAKER Cif	D7400	Sulfuric Acid	8-11				5			JR
5	24389	BAKER	P7243	Sulfuric Acid	8-11				5			JR
6	24387	Tideport	T-597	Mixtral o.i	8-11				3			JR
7	17171	CAS	70134	Tru-Bow	8-11				5			JR
8	17179	Bullz Eye	1721	Crude o.i	8-11				4			CP
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CES Tankwash Shift Report

Shift 2nd
 Date - 3-21-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25327	Noitex	2022	Vinyl Acetate	8-11				4			JL
2	25384	Noitex	1524	Vinyl Acetate	8-11				4			JL
3	25331	Texas oil	5095	Sulfuric Acid	8-11				5			JL
4	25313	PSC	1518	Petroleum Asphalt	9-11-12-18				3		mc	JE
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CES Tankwash Shift Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25386	Tideport	1084	Fuel oil	8-11				4			JPR
2	25387	Tideport	1085	Surfactant	8-11				4			JPR
3	25388	Tideport	11-911	eastman's	8-11				4			JPR
4	25331	Texas oil	5095	sulfuric Acid	8-11				5		n/c	JL
5	25313	PSC	1518	Asphalt	18				3		n/c	JL-JE
6	—	CES	10	Totes Redean	8-11				05			JL
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CES Tankwash Shift Report

Shift 2nd
 Date 2-19-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25317	CES	271	Oil & Methanol	8-11-10	35 gals			3			JE
2	25335	CES	252	Petro Dist.	8-11				4			JPR
3	25341	CES	241	Red Resin	8-11	110 gals			3			JE
4	25334	CES	271	W/Water	8-11				3			JP
5	25338	Petro Exp.	1201	Feldstock	8-11-12				3			JE
6	25330	LEES	2695	Fatty Acid	8-11				3			JE
7	25333	Fire Bird	361	Hydrocarbon	8-11				5			JL
8	25339	LEES	1175	Choline Chloride	8-11				5			JL
9	—	CES	103	Totes	8-11				5			JL
10	—	BJ	2	Totes	8-11				4			JPR
11	25343	CES	409	W-Water	8-11-16				4			JPR
12	25344	CES	8177	Sulfuric Acid	8-11				4			JPR
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CES Tankwash Shift Report

Shift _____
 Date 3/19/09
 Leadman Jammi

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Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24294	CES	103	strainer BASKETS	08-11				2			JP
2	25315	Inner Plant	8181	Glycol	08-11				3			CP
3	25312	BAKER Corp	D4313	w/H w/water	8-11				5			JR
4	25318	BAKER										
5	25305	Bullz Eye	T-219	Passivation	01-07-03-11				4			CP
6	25329	M.R.C.	6054	crude o.i	8-11				4			CP
7	25328	Inner Plant	3106	Petro. Dist	8-11				5			JR
8	25330	LEES	2695	fatty Acid	8-11				5	N/C		JR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-18-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	25311	RUR	27483	Derivative	8-11-16-12				3			JE
2	25310	Tideport	1062	JP-8	8-11				3			JE
3	7188	Tideport	1093	WAX	8-11-18				5			JAL
4	25309	RUR	27433	Derivative	8-11-16-12				3			JE
5		CES	287	Expt-only	14				4			JL
6		Tideport	1073	JP-8	8-11				4			JL
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CES Tankwash Shift Report

Shift _____
 Date 1/18/19
 Leadman Sam

Record all heels to the nearest half gallon.

(15)

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17198	LEES	2285	nitric acid	03-08-11				5	500		CP
2	24214	BAVAR	491	cont. 12x50	8-11		—		3			JR
3	17191	ET	T-552	Rinse After	07-11/6				4			CP
4	17189	Rain 4800	266311	Protogen	07-11				4			CP
5	25307	Light House	#053	o.i.g. water	07-11				5			JR
6	25303	DART	DLSFG	w/11 solids	08-11				3			ST
7	24214	Baker	12x50	cont. 12x50	8-11				2			JR
8	24305	Andrews	1707	Rinse After	07-11				5			JR
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EPAH0011000688

CES Tankwash Shift Report

Shift _____
Date 3/17/69

Leadman S. Ames

Record all heels to the nearest half gallon.

(1)

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17184	Petro Express	LT-1255	^{Sulfuric} Sulfuric acid	8-11				5 4	5:30 5:20	5:20	CP
2	17185	CES	270	alcohol	8-11				5 5	5:18 5:08	5:08	JR
3	24214	Baker	591	mates	8-11				2	7:00		JA
4	17175	Baker	7-7297	carp waste ^{H₂O}	8-11				3	6:45		JR
5	17186	Bulk Ely	206	crude oil	8-11				4	10:30		CP
6	24294	CES	103	strainer basket	12-8-11-18				3(1)	7:00		MC/BH
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EPAHQ0011000689

CES Tankwash Shift Report

Shift 2nd
 Date 3-17-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17197	CES	105	Oil Diesel	8-11				3			JE
2	17193	Mission	797	Base oil	8-11-12				3			JE
3	17192	Mission	295	Base oil	8-11-12				4			JL
4	17190	R4R	266309	Chempro	8-11				3			JE
5	17196	CES	270	W/W	8-11				3			JE
6	24377	BT	5 totes	Transaque	8-11-16				5			JRR
7	17189	R4R	266311	Pouproietax	8-11				4		n/c	JRR
8	17189	R4R							3			JL
9	17189	R4R	12750	Reclean	8-11							
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CES Tankwash Shift Report

Shift _____
 Date 3/16/09
 Leadman Sones

Record all heels to the nearest half gallon.

(1)

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17179	Bull Eye	1221	waste water	08-11	✓	✓	✓	4			CP
2	25314	Chem Pak	8353	wax	12-08-11	✓	✓	✓	4			CP
3	17174	Tideport	3020	Exxtmad Solvent	8-11				5			SR
4	17170	A.E.	LT-794	Feed stock	8-11				5			JR
5	24385	Baker Corp.	P-7400	Sulfuric Acid	03-08-11				5			JR
6	24389	Baker Corp.	P-7243	Sulfuric Acid	02-11				3			JR
7	24387	Tideport	T-527	mineral oil	8-11	-	-	-	5			JR
8	17171	CAS	70134	polyester resin	8-11				5			JR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-16-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	17181	R4R	260218	Filter unit	8-11-18				5			JL
2	17186	Tideport	1084	marine diesel	8-11				5			JL
3	17173	Bullzeye	677	crude oil	8-11				4			JPR
4	24306	Baker	264857	Waste Waste	8-11-18	300 sals			4			JPR
5	17176	Evalca	235	Vinyl Acetate	8-11				3			JE
6	26230	Baker	255	Dirty water	8-11-18	250 sals			3			JL-JE
7	17175	Baker	P7297	Sulfuric Acid	8-11				3		n/c	JE
8	—	R4R	mat's	Reclaim	8-11				5			JL
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CES Tankwash Shift Report

Shift 2nd
 Date 3-13-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24390	Tideport	106	oil	8-11				4			JL
2	24386	CES	419	light ends	8-11				4			JPR
3	24309	CES	262	C-61	8-11-12				3			JE
4	24383	KL Chempack	259	max	8-11				5			JL
5	24391	CES	215	Waste Flan	8-11				4			JPR
6	24392	CES	270	Gas Water	8-11				3			JE
7	24393	CES	6731	oil water	8-11				3			JE
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CES Tankwash Shift Report

Shift _____
 Date 3-13-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24311	Trimac	49-6286	set up latex	111318				5			J.R
2	24263	CES	235	methanol	11814				4			CP
3	24383	chempak	2596	wax	11128				5	N/C		J.R
4	24309	CES	262	C-61	11128				3	N/C		A.R
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CES Tankwash Shift Report

Shift 1
 Date 3-12-09
 Leadman Armundo

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24251	CES	271	caustic	118				3			JR
2	24251	CES	241	wastewater	118				4			CP
3	24249	A.C.	70671	INK	11128				4			CP
4	24311	Trimac	49-6286	Scrub Lutex	1181328				5	N/C		JR
5	24258	Idoport	8014	Xylex	11811				4			CP
6	24220	Baker	26502	Slurry oil	111218				3	N/C		JR
7	24247	CES	249	methanol	118				3			JR
8	24259	Hydrocarbon	18807	Lube oil	118				4	N/C		CP
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CES Tankwash Shift Report

Shift 2nd
 Date 3-12-9
 Leadman JE

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24259	Hyd. Eng. Pro	18807	Lubeoil	8-11-12				4			JPR
2	24366	Tideport	106	Xylene	8-11				4			JPR
3	24362	CBS	276433	n/ta	8-11-16				2			JP
4	24313	CBS	279019	n/ta	8-11				2			JP
5	24241	PUR	259955	Caustic	8-11-18	55 gals			2			JPR
6	24220	Baker	SV265022	Slurryoil	8-11-12	70 gals			3			JE
7	24262	CBS	104	n/ta Solids	7-11				3			JE
8	24201	CBS	271	W-water	8-11				3			JE
9	24311	Trinae	49-6286	Latex	9-11-13				5		n/c	JL
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CES Tankwash Shift Report

Shift 2nd
 Date 3-11-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24243	Liquid	5194	soy bean oil	8-11				4			JPR
2	24248	JAm	317	oil	8-11-12				3			JE
3	24252	CES	243	Red Resin	9-11	110 ⁵ ⁵			4 5			JL
4	24256	.	T701		8-11-18				3			JE
5	24255	CES	V 248	W. S. Lids	8-11-18				4			JL-JPR
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CES Tankwash Shift Report

Shift 1
 Date 3-11-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24240	CES	221	C-61	1112818		3 Drum		5			JR
2	24246	CES	878	Rewash	11816				4			CP
3	24245	CES	224	Solids	11818		6 Drum		3			AR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-10-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24234	RUR	258446	Remash	8-11				3			JE
2	24235	RUR	259026	Remash	8-11				4			JL
3	24236	Baker	GP7018	Soda Ash	8-11				3			JE
4	24238	Dart	FG42	carbon	7-11				4			JE
5	22828	Baker	SFVP8240	crude oil	8-11-12-18-16				5			JL
6	24237	RUR	254	Water & Mud	8-11				4			JL
7	24239	CES	LI-423	W. Water	8-11				3			JE
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CES Tankwash Shift Report

Shift 2nd
 Date 3-9-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24232	CES	259	Oil/water	8-11				3			JE
2	24221	CES	270	Shell oil	8-11				4			JPR
3	24230	CES	271	Oil/water	8-11				4			JPR
4	24229	Barnstormer	806	Corn starch	8-11				4			JPR
5	24228	Andrews	5085	passivation	3-7-11-21				3			JE
6	24231	CES	105	W/H Sludge	8-11	55 gal heel			3			JE
7	22828	Baker	SEVP 240L	crude oil	12				5		n/c	JL
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CES Tankwash Shift Report

Shift 1
 Date 3-10-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24224	TEPRO	931805	crude oil	118				4			CP
2	22828	Baker	8240	crude oil	112818				5	N/L		SR
3	24233	CES	414	methanol	11818	250 gal.		R/O	3			AR
4	24281	CES	276227	waste sludge	11818	100 gal.		R/O	4			CP
5	24283	CES	276529	N/A Solid	811816				1			M.C.
6	24312	CES	254	Base oil	118				3			AR
7		CES	Poly Tank		117				3			A.R.
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CES Tankwash Shift Report

Shift 1
 Date 3-9-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24310	CES	2815	C-61	11128				3			AR
2	22828	Baker	8240	crude oil	11128	55 gal.			5	N/C		JR
3	24361	JAM	314	huber oil	118				4			CP
4	24223	chempak	543220	Wax	118				3			AR
5	24226	CES	257	C-61	11128				1			CP
6	24225	Lee's	1105	I/A	1112				3			JR
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EPAHQ011000702

CES Tankwash Shift Report

Shift
 Date 3-7-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24222	CBS	221	N/A Solids	8-11-18				3			JE
2	24216	chen pack	2586	ARC 165	8-11				9			JPR
3	—	CES	1264	e-bl	8-11-16				4			JPR
4	—	clean out the gutters	—	—	18				3-4-5			JPR-JE-JLA
5	—	CES	298	Ext only	14				3			JE
6	—	CES	2000	Ext only	14				5			JL
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CES Tankwash Shift Report

Shift JNE
 Date 3-6-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24211	CES	221	SS N/H Solids	8-11-18				2	-		mc
2	24217	LEES	965	cal alum Bronze	9-11				5			JL
3	24212	Petro Exp.	1199	Yubase oil	8-11				21			JPR
4	24218	Tideport	106	Acrylic Ac. d	8-11				4			JPR
5	24216	Chem pack	2586	ARC 165	8-11				5		n/c	JL
6	24303	Tideport	1093	wax	8-11-18				3			JE
7	24222	CES	220	N/H Solids	8-11-18				3		n/c	JE
8	24221	Tideport	305A	pump	8-11				0			JL
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CES Tankwash Shift Report

Shift 1
 Date 3-6-09
 Leadman Amado

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24210	CES	109	oil/water	114				3			AR
2	26310	CES	622	N/A Solids	118				3			AR
3	26264	Baker	8148	Slurry oil	1112	1618			5			JB
4	24307	Baker	29029	waste water	11128				4			CD
5	24303	TidePort	1093	wax	11818				3	N/C		AB
6	24215	Lee's	2005	Re wash	118				5			JR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-5-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24203	JAM	281	Diesel	8-11				4			JPR
2	24202	Liquid	75-957	Fuel oil	1-11				5			JL
3	24376	CES	241	Red Resin	9-11-16				3			JE
4	24208	CES	228	W. Solids	8-11				3			JE
5	24204	ETS	N48461	Rinse After Knp.	7-11-16				4			JL
6	—	CES	LT-423	Ext. only	15				5			JL
7	24307	Baker	SV29029	W. Water	8-11				4		N/C	JL
8	24264	Baker	FVP8148	Shiny oil	8-11-12				5		N/C	JPR
9	24209	CES	RT758	Waste paste	8-11-13-16				3			JE
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CES Tankwash Shift Report

Shift 1
 Date 3-5-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24304	Andrus	1721	Re wash	117				5			JR
2	24360	ETS	342	Re wash	117				4			CP
3	24305	Petro	592	crude oil	11128				3			AR
4	24305	Palida	592	Petro Dist	11128				3			AR
5	24373	RFR	25522	water & mud	11818				4			CP
6	24201	CE3	104	N/H Solids	11416				3			AR
7	24202	Liquid	25593	Fluel oil	118				5	N/C		JR
8	24206	CE3	243	waste water	118				3			AR
9	24207	CE3	259	oil	118				4			CP
10	24284	CE3	276108	waste Solids	11816				1			JAY/mc
11	24293	CE3	0825043	soil	11816				2			JAY/mc
12	24273	CE3	31195	N/H Solids	11816				2			JAY
13	24374	CE3	29782	N/H Solids	11816				2			JAY
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CES Tankwash Shift Report

Shift 2nd
 Date 3-4-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24305	Pulido	592	Petro P.st.	8-11-12				3		n/c	JE
2	24301	RHR	254324	MWD water	8-11-18	750 ⁵	c/p		5			JL
3	24375	Tideport	1077	JP8	8-11				5			JL
4	22865	SNBC	21568	BUKF	8-11-18-19				4			J.P.R
5	24379	Pulido	LT-874	Mixed Hydrocarbon	8-11-12				3			JE
6	24300	Tideport	1049	JP-8	8-11				3			JE
7	24382	Petro Exp.	LT-1318	Tubase oil	8-11				5			JL
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CES Tankwash Shift Report

Shift 1
 Date 3-4-09
 Leadman Armen

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24370	CES	270	shell oil	118				5			JR
2	24298	CES	337	metanol waste	118	1/2			4			CP
3	24266	Baker	28978	waste water	1128				3			AR
4	24371	CES	259	Base oil	118				5			JR
5	24372	CES	Hoscar	oil	118				4			CP
6	24297	Petro	372	W-WATER	118				4			CP
7	24300	Tidepon	1049	J-P-8					3	N/C		AR
8	24375	Tidepon	1077	J-P-8	118				5	N/C		JR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-3-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24271	Baker	SV29034	Waste Water	8-11-12				4			JPR
2	24276	Baker	SV23121	Crude Water	8-11-12-16				5			JL
3	24295	CBS	228	Champion Water	8-11				3			JE
4	24354	Baker	SV27492	Pre-Rinse	8-11-16				3			JE
5	24368	CBS	256	Shell Oil	8-11				4			JPR
6	24274	Baker	SV29098	Waste Water	8-11				5			JL
7	24369	JAm	312	570 Oil	8-11				3			JE
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CES Tankwash Shift Report

Shift 1
 Date 3-3-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24291	CES	228	WASTE WATER	118				4			CP
2	24275	Baker	3358	WASTE WATER	118				4			CP
3	24288	Chem Pak	2557	WAX	118				5			JR
4	24290	CES	270	Oil x WATER	114				5			JR
5	24292	Andrews	1807	Re Wash	117				5			JR
6	24363	Baker	29098	WASTE WATER	11128				3			AR
7	24272	Baker	21444	WASTE WATER	118				4			CP
8	24276	Baker	23121	Crude oil	11812				5	N/C		JR
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CES Tankwash Shift Report

Shift _____
 Date 2-7-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22926	Andreas	1807	GOAP	11818				5			
2	26328	CATX	602	N/H Solids	11818				4			CP
3	24280	CE3	104	Ex Wash	1115				3			AR
4	24395	ETS	T-183	Re wash	11716				4			CP
5	26237	ETS	T-444	Re wash	11716				3			AR
6	24325	CE3	1305	Base oil	11818	16			4			CP
7	24277	Bullseye	590	crude oil	118				5			STR
8	26284	Baker	26505	Acrylic Acid	11818	12	175 gal		3			AR
9	24264	R.F.R.	25597	WASTE water	118				5			STR
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CES Tankwash Shift Report

Shift 2nd
 Date 3-2-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24282	Baker	40575	Benash	2-11				3	3		JE
2	24278	Texas oil	1113	Flam. Liquid	8-11				4			TL
3	24355	Baker	5129007	Al Kase	8-11-12-14				5			JPR
4	24279	Forged Prod.	276112	Waste Sludge	8-11-TP				34			JPR
5	24285	CES	66731	Methanol	7-11	500 ⁵ L	106		3			JE
6	24286	CES	413	Methanol	7-11	500 ⁵ L	106		3			JE
7	22949	Tideport	1094	Exhaust S.	8-11				4		n/c	TL
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CES Tankwash Shift Report

Shift 1
 Date 2-28-99
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24268	PETRO	1255	Base Oil	11128				4			CP
2	24368	Chem Pak	5431425	WAX	118				3			AR
3	21926	Andrews	1807	SOAP	11818				5	N/C		AR
4	22927	ETS	T-559	Re wash	11816				4			CP
5	26301	Baker	CV29508	gear oil	11816				3			AR
6	26319	CES	604	N/H Solids	118				3			AR
7	26328	CES	602	N/H Solids	118				4	N/C		CP
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CES Tankwash Shift Report

Shift 2nd
 Date 2-27-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24267	Global	ST-2	oil/water	8-11	35 1/2			4			JPR
2	24265	Baker	688	Ext-arky	14				5			JL
3	24342	Baker	SV2540	Wastewater	8-11-12-16				5			JPR
4	24268	Petro Exp	LT-1255	Yubase oil	8-11-12				4		n/c	JL
5	26301	Baker	CV29508	gear oil	8-11				3		n/c	JE
6	22740	CES	LT-1264	C-61	8-11-12				3			JE
7	22637	Baker	VB25804	Slurry oil	8-11-12				5		n/c	JL
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CES Tankwash Report

Shift _____
 Date 2-27-09
 Leadman Armenio

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
124350	Boyer	27461	Recessh	11816				4			CP
224356	CES	270	Fuel Oil	118				5			JR
324348	CES	249	Base oil	11812				3			AR
422942	CES	241	Waste center	118				3			AR
524344	SNBC	20520	Sul. Acid	11213				5			JR
624334	FR FR	239561	Water mud	11818	1-Ton			4			CP
724345	Firebird	344	used oil	118				4			CP
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CES Tankwash Report

Shift 2nd
 Date 2-26-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24343	Martin	7755	Wbe oil Add	8-11-12				5			JL
2	24346	Global	51-2	Oil/water	7-11				3			JE
3	24319	Baker	V6 27411	Sour Water	8-11-12-14				2			MC
4	24350	Baker	SV27461	ReRinsec	8-11-12				4		n/c	JPR
5	24321	Baker	SV22246	Sodium Nitrate	8-11				3			JE
6	24352	Petro	2154	Renash	8-11-14				3			JE
7	24351	KL Pak	2798	Wax	8-11-18				4			JPR
8	22828	Baker	688	Ext only	14				5			JL
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CES Tankwash Report

Shift _____
 Date 2-26-09
 Leadman Mwende

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24335	Baker	29034	Re wash	11812				4			CP
2	24338	CES	271	waste water	11816				5			SR
3	24336	CES	423	waste water	118				5			SR
4	24339	CES	410	Base oil	218				4			CP
5	24398	CES	409	W/WATER	118				3			AR
6	24340	Lees	775	FATTY ACID	118				6			SR
7	24341	DART	F634	Carbon	118				4			CP
8	24351	AKC	2798	WAX	118				4	N/C		CP
9	24352	PETRO	1154	Re wash	11188				3	N/C		AR
10		ITS	6301	Re wash	1116				5			SR
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CES Tankwash Report

Shift 1

Date 2-25-09

Leadman Amendy

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24324	JAM	318	Lube oil	11128				5			JR
2	24320	Baker	336	veg. oil	118				4			CP
3	26302	Baker	26496	Brine Neutral	11818				3			A.P.
4	27929	Fivebird	341	Flammable Liquid	118				5			JR
5	24326	Tideport	2019	Mixed Bottom	118				5	NIC		JR
6	26255	RER	2 Hose		118				2			ST
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CES Tankwash Report

Shift 2nd
 Date 2-25-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24332	CBS	252	W. Water	9-11				5			JL
2	24327	JAM	314	Mobil grade	8-11-12				4			JPR
3	24331	CBS	260	oil water	8-11-16				3			JE
4	26398	ETS	F-490	Rinse	7-11-16-12				3			JE
5	24337	ETS	543	Rinse	7-11-16				5			JL
6	24326	Tideport	2019	Mix Dettolons	8-11				5			JL
7	24333	CBS	220	W. Water	8-11				3			JE
8	24397	CBS	233	W. Water	8-11				4			JPR
9	24335	Baker SV	29034	Pre-Rinse	8-11-12				54		n/c	JPR
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CES Tankwash Report

Shift 2nd
 Date 2-24-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24322	Petro	91028	luboil	8-11-12				4			JPR
2	26263	ETS	T-705	Rinse	8-11-16				5			JL
3	22916	Baker	R25644	Crude Hyd.	8-11-12-18				2			JAY
4		Tideport	7045	Acid Wash	18-7-11				5			mc
5	24323	Petro	1154	Feedstock	8-11-12				3			JE
6	24318	CES	LT-846	Baseoil	8-11-12-16				3			JE
7	24325	CES	LT1305	Baseoil	8-11-12-16				4		n/c	JPR
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CES Tankwash Report

Shift 1
 Date 2-24-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	24315	CES	206	Ext wash	1115				3			AR
2		CES	100	Ext wash	1111				4			CP
3	24316	CES	415	SPA waste	118				4			CP
4		Tidepool	1045	Solvent	111218				5	N/C		STR
5	26790	Baker	266	Ditch water	11818				3			AR
6	24317	CES	228	oil water	118				4			CP
7	22924	Hunt	7152	hub oil	118				4			CP
8	22925	Team	747	Glycol	118				3			AR
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CES Tankwash Report

Shift 1
 Date 2-23-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122935	Baker	P 7297	Re wash	118				4			CP
222948	Andrews	7333	Setup Resin	118 18				3			AR
322947	Inner Plant	5526	Friction	128				5			JP
422950	CES	104	oily water	118				4			CP
522937	CES	254	Rust oil	11128				4			CP
622938	CES	252	MEK	128				5			JP
722966	REF	263-50	oil	118				1			JP
822940	Light	25	oil	118				4			CP
922939	Team	747	veg-oil	118 18				5	N/C		JP
1026253	CES	255372	oil	1188	250 gal.	R/O		3	N/C		AR
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CES Tankwash Report

Shift 2nd
 Date 2-23-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22939	Team	747	Vegetil	8-11	150	5			5		JL
2		Tide port	1045	Acid wash	78					5	h/c	JL
3	22913	Baker	505	Raw propane	8-11-18		250	59.5		4		JPR
4	26253	CES	25532	Librizol	8-11-18					3		JE
5	24314	CES	235	Methanol	8-7-11-16					3		JE
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CES Tankwash Report

Shift 2nd
 Date 2-21-9
 Leadman SL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	226201	Nustar	VB25144	molassas	8-11				4			JL-JPR
2	226203	Andrew	7334	Resin	9-11-18				4			JL-JPR
3	22944	Petroleum	1318	Yobase 4	8-11-18				5			AR
4	22946	Imperial	9028	n/gt modifli	8-11				3			JE
5	22948	CES	271	Blackoil	8-11				3			JE
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GES Tankwash Report

Shift 1
 Date 2-20-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior												
Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials	
122930	PETRO	1078	6-5035	118				5			JR	
220257	Andrews	5100	set up Resin	11818				4			CP	
326244	Notex	30464	waste solids	11810	55	901	N/C	4	N/C		CP	
426215	Baker	P-7243	Potassium	118				5			JR	
526269	Baker	TP4040	Fluid	118				5			JR	
626394	CE S	263	Base oil	118				5			JR	
726203	Andrews	73341	Resin	11818				5	N/C		JR	
826244	R.F.R.	259058	waste solids	1118				3	N/C		AR	
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CES Tankwash Report

Shift 1
 Date 2-19-09
 Leadman Armande
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26205	CES	270	Fuel Oil	118				3			AR
2	26216	Fivebire	325	Petroleum	118				4			CP
3	26252	Andreas	1708	Re wash	117				4	N/C		ER
4	26217	CES	29871	Waste Solids	11816				5			SR
5	26206	Tidceon	1025	Hydrocarbon	1184				5			SR
6	26258	CES	222	Base Oil	118				5			SR
7	26260	CES	249	Toluene	119				5			SR
8	26239	NoITex	31449	N/H Solids	11816				4			CP
9	26248	NoITEX	31439	Waste Solids	11816				4			CP
10	26288	RFR	259058	Pre Rinse	1118				3	N/C		AR
11	26262	chem Pak	543210	STETRAKIS	118				5			SR
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CES Tankwash Report

Shift 2nd
 Date 2-19-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22931	CES	271	oil/water	8-11-16				5			JL
2	26861	Firebird	346	MTBE/Mixtur	8-11				4			JPR
3	26288	RHR	259058	oil	8-11				3		n/c	JE
4	22934	Burbank	32127	oil	8-11				5			JL
5	—	ETS	351	Leakless	7-11				5			JL
6	26252	Andrews	1708	Rinsed	8-11				5			JL
7	22922	CES	206	Lube oil	8-11-				4			JPR
8	22933	Enviro	103	Lighten's	8-11	155	dp		4			JPR
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CES Tankwash Report

Shift 2nd
 Date 2-20-9
 Leadman JE

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22943	Tideport	1019	TP-8	8-11				5			JL
2	22945	Tideport	3007	SP-8	8-11				3			JE
3	26100	Everead	370	N/H Waste	8-11				4			JPR
4	26202	ITS	6301	Red Ink	9-11-12	2	Pump		3			JE
5	26244	NotTex	RB 30464	waste sol. ds	8-11-16				4			JPR
6	26203	Andrews	7334	Resin	9-11-18				2.5		nk	JL
7	26204	Nustar	NB 25144	Molasses	8-11				5		nk	JL
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CES Tankwash Report

Shift And
 Date 2-18-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26001	Andrews	7522	Lubricants	8-11				5			JL
2	26279	RHR	27900	oil waste	8-11-16-18				4			JPR
3	26202	ITS	6301	Ink	9-11-12				3		nle	JE
4	26207	CES	259	oil/water	8-11-16				5			JL
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CES Tankwash Report

Shift 1
 Date 2-18-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26247	Firebird	310	CUTTER STOCK	118				3			AR
2	22923	Petro	1318	hub e oil	1128				5			JK
3	26243	Baker	28996	oil	118				4			JP
4	26304	ETS	T-305	Re wash	117				5			JP
5	26254	Phoenix	WT-1	oil & water	118				3			JP
6	26251	CES	416	methanol	117				4			CP
7	26303	Altivia	T-81	chlorine	118				3			AR
8	26218	Tidepon	1045	solvent	1184				4			CP
9	26249	Baker	28183	CAUSTIC	118				5			JK
10	26246	CES	30447	waste solids	11816				4			CP
11	26201	Andrews	7522	oil	118				5	NIC		JK
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CES Tankwash Report

Shift 2nd
 Date 2-17-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	06236	Tideport	1085	Wax	8-11-18	75	515		4			JPR
2	06245	CBS	224	Black Oil	8-11-16				5			JL
3	06238	CBS	406	Dase Oil	8-11-18				5			JL
4	06240	Fix	497888	Turbo Elm	9-11-18				5			JL JPR
5	02922	CBS	259	Waste Flam.	8-11				3			JE
6	06242	CBS	270	Waste Flam.	7-11				3			JE
7	—	Petro	1207	reclaim	8-11-16				3			JE
8	—	Daelimcorp	080024	0311-1 Ext. on	7-11-16				4			JPR
9	06247	Firebird	310	Cutterspock	7-11				3		n/c	JE
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CES Tankwash Report

Shift _____

Date 2-17-09

Leadman Amador

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CES	100	Ext wash	1121				3			JR
2	26326	Trimac	470010	water	111318	8			3			AR
3	26220	Tideport	1048	Disci	1184				1			CP
4	26228	K.F.R.	254796	calcium water	118				5			JR
5	26219	mission	6200	crude oil	118				5			JR
6	26236	Tideport	1085	wax	11818				4		nle	CP
7	22760	DEMA	615	waste solids	118				2			JP
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CES Tankwash Report

Shift 2nd
 Date 2-16-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26233	Flx	103	Turbo Flex	9-11-18-12	45	P6		5			JL
2	26326	Trimac	470010	La-Lap	9-11-120				3		n/c	JE
3	26234	CES	226	Oil	8-11-10				5			JL
4	22696	RUR	4	mats	8-4-11				4			JPR
5	22691	RUR	3	mats	4-11				4			JPR
6	26235	CES	256	W-water	7-11				5			JL
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GES Tankwash Report

Shift 1
 Date 2-16-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26326	Trimac	47-0010	Latex	111318	8			3	11C		AR
2 26226	Tideport	1052	Diesel	1184				5			JR
3 26227	Bullseye	534	crude oil	118				5			JR
4 26224	Tideport	1099	Transmit	1184				5			JR
5 26358	Baker	21341	slurry oil	11812	6			2		JAY BH	
6 26314	Baker	24133	Slurry oil	11128	6			1		JAY BH	
7 26321	Baker	29330	Slurry oil	11128	6			2		JAY BH	
8 26359	chempak	1941	wax	118				4			CP
9 22703	Tideport	1051	Diesel	1184				1			CP
10 26231	CE3	256	oil/water	118				5			JR
11 22704	CE3	265	Base oil	118				5			JR
12 22705	Inner Plant	7145	oil/water	118				5			JR
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CES Tankwash Report

Shift 2nd
 Date 2-13-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26397	CBS	2535	Sulfuric Acid	8-11	55 gal			3			JE
2	26309	RHR	259025	Oil	8-11-12				4			JPR
3	26221	JAM	318	Lube oil	8-11-12				3			JE
4	26222	CBS	263	Light Ends	8-11-16				3			JE
5	26223	CBS	104	W. Water	8-11				5			JL
6	26350	Miller	91-5088	Resin	9-11	55 gal			5		n/c	JL
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CES Tankwash Report

Shift 1
 Date 2-12-09
 Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26285	Baker	6271	Rusty Water	118				4			CP
2 26287	Baker	3205	Turbine Fuel	118				3			AR
3 22884	Baker	21073	Sludge oil	118(2)				5			JR
4 27806	CES	266	Waste Water	128				4			CP
5 27810	CES	410	Base Oil	118				3			CP
6 26305	Tenneco	60114	Kube Oil	118				5	NIC		JR
7 22856	CES	6731	Ex Wash	1116				4	NIC		CP
8 26306	ETS	T-444	Re Wash	11716				5			JR
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EPAHQ0011000737

CES Tankwash Report

Shift 2nd
 Date 2-11-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26295	Baker	MX3234	Pier. nse d	8-11-12				4			JPR
2	26390	CES	259	Resin	9-11-16	55			3			JE
3	26384	ETS	T-641	Rinse	7-11-16				3			JE
4	22811	Global	ST-2	Oily water	8-11				4			JPR
5	26388	CES	416	Light Ends	8-11				5			TL
6	26389	TAM	317	Whe oil	8-11-12				4			JPR
7	22628	Baker	1623	Ext only	15				5			TL
8	26299	CES	235	Methanol	8-11		55 drum		3			JE
9	26290	CES	LT 878	Toulene	8-11-16				3			JE
10	26297	CES	243	Oily water	8-11				3			JE
11	26385	Petro	LT-1104	Re. clean	8-11				5			TL
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CES Tankwash Report

Shift 1
 Date 2-11-09
 Leadman _____

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22335	Baker	19895	crude oil	1128	1618			3			AK
2	26278	RFR	25980	waste water	118				5			JR
3	26292	Baker	607071	waste water	118				4			CP
4	26282	RFR	255188	oil	118				4			CP
5	26291	RFR	23432	waste water	118				5			JR
6	26294	CES	256	Feed Stock	118				5			JR
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GES Tankwash Report

Shift 2nd
 Date 2-20-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26387	LEES	2165	Fatty Acid	8-11				5			JL
2	26286	JAM	3318	Lube oil	8-11-12				4			J.P.R.
3	26287	ETS	T-444	Petro D. St	8-11-12				4			J.P.R.
4	26289	CBS	105	Ringed	8-11				5			JL
5	26326	Trinac	470010	Isopar	18				3		A/C	J.E.
6	22335	Baker	198950	W. Water	18	350 gals			0		n/c	J.E.
7	22789	RUR	717	Spill guard	8-11				2			J-0
8	26315	CEB	NA 2523	N/H Solids	8-11				2			JAY-0
9	22618	CEB	6731	MER	8-11-18				5			JL
10	26385	Petro Exp.	LT 1104	Lube oil	8-11-12				4			J.P.R.
11	26283	Inner Plant	2346	Lube Add.	8-11-12				5			JL
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CES Tankwash Report

Shift 2nd
 Date 2-12-09
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26305	Energyland	60114	Infineum	8-11				5			JPR
2	22807	Tideport	104	naptha	8-11				5			JPR
3	22618	CBS	1631	mtk	8-11-18-16				4			JL
4	26306	R4R	26024	w: mud	8-11				3			JE
5	26311	CBS	266		8				3			JE
6		CBS	1878	ReClean	8-11				3			JE
7	26355	CBS	270	w. water	8-11-16				5			JL
8	26356	CBS	226	lube oil	8-11				5			JPR
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CES Tankwash Report

Shift 1
 Date 2-13-09
 Leadman Amancio
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126357	PETVO	25-794		118				5			JR
222812	ETS	T-459	Re wash	11716				1			CP
326341	MILLER	124069	Resin	11138	18			3			AR
421700	RFR	5-4"	Hose	118				2			DP JR
526309	RFR	259025	oil	11822				4	N/C		CP
626331	Instiiform	124154	Resin	11813	18			5			JR
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EPAH0011000742

CES Tankwash Report

Shift 1
 Date 3-14-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	16288	Andrews	1888	REWSH	117				4			CP
2	2202	CES	205	Wustelwater	118				4			CP
3	26350	Miller	91-3088	Resin	11138	18			5			SR
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CE3 Tankwash Report

Shift 1
 Date 2-11-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 26281	CE3	105	oil/water	118				4			CP
2 26377	CE3	409	oil/water	118	100 gal.			5			JR
3 22788	RFR	239325	waste water	118/18				3			AR
4 26337	Allied	2281	crude oil	118				5			JR
5 26380	CE3	270	oil/water	118				4			CP
6 26326	Trimac	470010	latex	118				3	N/C		AR
7 26383	TidePort	105	petro dist	118/1				5			JR
8 26382	CE3	105	dig out	118	200 gal.	R/O		4			CP
9	ETS	543	RE wash	118/16				4			CP
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CES Tankwash Report

Shift 2nd
 Date 2-9-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26316	Baker	SV29063	citric Acid	8-11				3 24			JE
2	26274	JAM	319	oil	8-11-12				4			JPR
3	26378	Chem Park	942195	-0 PEG	8-11	45 gals			4			JPR
4	22853	409 Tideport	71092	WAX	8-11-18				5			JL
5	26349	CES	1264	f/Am. liquid	8-11-12				5			JL
6	26277	R4R	265019	N. Water	8-11				3			JE
7	22785	R4R	239325	Oil	8-11-18	200 gals			3		n/c	JE
8	22620	CES	NB2524	n/h Sludge	8-11				2			JAY-D
9	26276	CES	NB2523	Waste Sol. ds	8-11				2			JAY-D
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CES Tankwash Report

Shift 1
 Date 2-9-09
 Leadman Prunado
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26268	Chem Pak	2254	crystal gel	1128				4			C.P.
2	26374	chem pak	2799	crystal gel	1128				5			J.R.
3	26275	Lee's	2285	TAN oil	1128				3			A.R.
4	22912	Baker R	28143	Asphalt	1128				2			B.H.
5	26376	Phimex	VT-1	oil/water	114				3			A.R.
6	26375	Kirscher	7028	watex	118				3			A.R.
7	22769	leapfrog	256	solids	118				1			J.R.
8	26274	JAM	319	oil	118				4	N/L		C.P.
9	22853	Tide Pon	1093	wax	118				5	N/L		J.R.
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CES Tankwash Report

Shift 2nd
 Date 2-7-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26354	Phonix	593	IPA Viter	8-11				3			JE
2	26267	CES	2815	W.Water	8-11				3			JE
3	26313	CES	249	Lube oil	8-11-12-16				4			JL
4	26312	CES	228	W.W.	8-11-16				5			JL
5	—	CES	217	Rinse	11-3				3			JE
6	26349	CES	1264	Flam. Liquids	8-11				5			JL
7	26375	Kirsher	7028	Latex	3-18				3		n/c	JE
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CES Tankwash Report

Shift 2nd
 Date 2-6-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26338	Tideport	1010	Decahydronaphthalene	8-11				3			JE
2	26343	Imperial	5621	Intineum	8-11				3			JE
3	26344	Petro Exp.	1207	WasteWater	8-11-2				3			JE
4	26339	CES	274668	Plant Trash	8-11-10				4			JPR
5	26334	Daelimcore	OK02403	11-1 Diacphthalate	8-11				4			JPR
6	26335	Polar	803880	Oil	8-11				5			JL
7	26342	Blentech	OK024009	2 Dicphthalate	8-11				5			JL
8	26336	CES	419	Zach Stream	8-11				5			JL
9	26351	CES	259	W.W.	8-11				5			JL
10	26345	CES	105	n/A Sludge	8-11				4			JPR
11	26347	CES	255	CES	255				4			JPR
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CES Tankwash Report

Shift 1
 Date 2-6-09
 Leadman Armando

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
126332	PETRO	688	lub oil	11128				3			AR CP
226330	CES	271	oil & water	118				3			AR
326327	Baker	29004	crude oil	11128				5			JR
426368	Baker	28998	crude oil	11128				1			CP
526333	Schneider	21977	waste water	118				5			JR
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CES Tankwash Report

Shift 2nd
 Date 2-5-9
 Leadman TL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26373	Tideport	T-527	Napthdene	8-11				5			TL
2	26318	Texas oil	5020	Non Reg.	8-11				5			TL
3	22921	Hydrii	RB25711	Non Haz Solid	8-11-16-18				2			B.H.
4	26317	CES	104	n/h Waste	8-11				4			J.P.R.
5	26372	Tideport	3014	Napthalene	8-11				4			J.P.R.
6	26320	Tideport	1085	Base oil	8-11-12				4			J.P.R.
7	26322	CES	L932	Light Ends	8-11-14				3			JE
8	22919	Bakco	1929500	Crude oil	8-11-12				3			JE
9	26362	Tideport	1051	JP-8	8-11				3			JE
10	26370	CES	LT-1305	Light Ends	8-11				5			TL
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EPAHQ011000750

CES Tankwash Report

Shift 1
 Date 2-5-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	26394	JAM	318	Lube oil	118				5			JR
2	26316	CES	239	m Ek	118				4			CP
3	26396	PETRO	794	Brake fluid	118				5			JR
4	22917	CES	271	Red Resin	118				4			CP
5	26392	RER	259321	water post	118				4			CP
6	22618	CES	6731	m Ek	11818				5	N/C		JR
7	26369	TEPPCO	945537	crude oil	118				4			CP
8	26373	CES	228	m Ek	118				4			CP
9	26325	CES	233	Resin	118				5			JR
10	22919	Baker	1929	crude oil	118				3	N/C		AR
11	26318	TEXAS	5020		118				5	N/C		JR
12	26371	DAVY Truck	163640	PTAF0005	114				4			CP
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CES Tankwash Report

Shift _____
 Date 2-4-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122772	Innerplant	249	Alcohol	118				5			JR
222765	Baker	28985	Diesel	118				4			CP
322920	Baker	26498	Diesel	118				3			AR
422770	Baker	3345	Diesel	118				4			CP
526365	Global	ST-2	oil/water	118				5			JR
622634	Firebird	319	crude oil	119				4			CP
722363	Firebird	346	Fuel oil	119				5			JR
822885	Baker	221 SD	Pre Rinsed	118				3			AR
922914	CES	204	wastewater	114				4			CP
1026366	CAS	70131	markol	118				4	N/C		CP
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CES Tankwash Report

Shift 2nd
 Date 2-4-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	226395	Cagon	005F6	Carbon	8-11				4			J.P.R.
2	226394	JAM.	318	Lube Oil	8-11-12				5		N/C	JL
3	22887	Baker	P7297	Wash Water	8-11	55 ⁹ 25.			5			JL
4	226367	CES	274226	Mon Haz. Solids	8-11	16			3			JE
5	226393	CES	260	W-Water	8-11				3			JE
6	22911	ETS	T-351	Ext. Wash	15				5			JL
7	226366	CAS.	70131	Markol	8-11				4			J.P.R.
8	22918	R4R	265343	Test Water	8-11				5			J.P.R.
9	22628	Baker	162350	Cutter Stock	8-11				4			J.P.R.
10	22771	Baker	G37950	L Marine Diesel	8-11				3			JE
11	22915	R4R	241979	H550	8-11				4			J.P.R.
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CES Tankwash Report

Shift 1
 Date 2-3-09
 Leadman Amendo
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22621	JAM	318	huber oil	18				4			CP
2	22622	GES	271	MEK	128				3			AR
3	22763	Baker	22726	Diesel	118				5			JR
4	22623	Lee's	935	Tan oil	118				5			JR
5	22624	GES	270	CAUSTIC	118				3			AR
6	22760	PETRO	688	waste water	118				5			JR
7	22894	Baker	24573	CATALYST	11816				5			JR
8	22626	GES	205	crude oil	11128	1 drum			7			CP
9	22627	Tideport	1099	PETRO Naptha	1184				3			AR
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CES Tankwash Report

Shift 2nd
 Date 2-3-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22691	Baker	SV23120	Marine Diesel	8-11				5			JL-JR
2	22899	Baker	SV28984	Catalytic Resid	8-11-1655	8 ¹⁵			4			JL-JR
3	22766	CES	104	Haz water	8-11				3			JE
4	22809	Action Res.	T-543	Gas water	8-11-16				3			JE
5	22764	Petro Exp.	LT-1028	Crude oil	8-11-12				3			JE
6	22768	Cagon	DC5F9	Carbon	8-11				4			JL-JR
7	22747	CES	243	Methanol	7-11-16				5			JL-JR
8	22765	Baker	SV28985	Marine Diesel	8-11				4		n/c	JL-JR
9	22920	Baker	SV26498	Marine Diesel	8-11				3		n/c	JE
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CES Tankwash Report

Shift ohd
 Date 2-2-9
 Leadman JL
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22808	Hurt	7152	Lube Oil	8-11-12				4			CP
2	22667	RHR	24410	Hydrolic Oil	8-11-12				4			JL
3	22763	Baker	SV22726	Marine Diesel	8-11				5		n/c	JL
4	22762	Baker	SV28976	Marine Diesel	8-11-12				3			JE
5	22759	JAM	T-351	Oil	8-11				3			JE
6	22906	Innecplan	2355	In Fineum	8-11				3			JE
7	22162	CES	6731	MEK	18				5		n/c	JL
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CES Tankwash Report

Shift _____
 Date 2-2-09
 Leadman _____

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122804	CES	205	WASTE WATER	118				3			AR
222805	CES	270	oil & water	118				3			AR
322832	ETS	T-468	Re wash	117 10				4			SR
422802	Milstead	B-10	oil & water	118				3			AR
522867	ETS	T-363	Re wash	117				3			AR
622803	ANDREWS	1710	Re wash	117				4			CO
722618	CES	6731	M E K	118 18				5	N/C		SR
822906	Inner Plant	2355	Infineum	119				3	N/C		AR
922619	PETVO	112	Pump	118				3			AT
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CES Tankwash Report

Shift _____
 Date 1-31-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22773	CES	241		118				4			CP
2	22614	CES	260	MEK	114				5			JR
3	22898	Baker	28999	catalyst	118				5			JR
4	22615	Tidepon	924	Pump Slurry	118				5			JR
5	22618	CES	235	methanol	118				5			JR
6	22617	CES	HOSE	12-3" 2-2"	11818				3			AR
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CES Tankwash Report

Shift 2nd
 Date 1-30-9
 Leadman JL
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22801	CES	258	Black oil	8-11				3			JE
2	22909	CES	233	Toulene	8-11				5			JL
3	22613	M-1sted En	033	Diesel/water	8-11				4			CP
4	22866	Baker	SV29013	Wastewater	8-11	55 gals			4			CP
5	22910	Southwest	0169	oil	8-11				3			JE
6	22859	Tideport	T-448	Wax	8-11-18				3			JE
7	22843	Baker	SV22246	Catalyst	8-11	55 gals			5			JL
8	22749	LEES	2115	Fatty Acid	8-11				4			CP
9	22616	CES	249	W-Water	8-11				3			JE
10	22848	Baker	SV28999	Catalyst	8-11	55 gals			5		n/c	JL
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CES Tankwash Report

Shift 1
 Date 1-30-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 22861	Chempak	2573	wax	118				3			AR
2 22798	Global	3TT#1	oily water	118				3			AR
3 22860	RFL	259045	waste water	118				5			SR
4 22907	CES	260	oily water	118				5			SR
5 22908	CES	228	oily water	118				5			SR
6 22901	Inner Plant	7145	oil	118				5			SR
7 22902	CES	221	waste water	118				3			AR
8 22891	Tideport	1501	Re wash	118				5			SR
9 22862	ETS T	697	Re wash	117				4			CP
10 22799	Lee's	2115	Fatty Acid	118				4	N/C		CP
11 22859	Tideport	T-448	wax	118				3	N/C	CP	AR
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CES Tankwash Report

Shift 2nd
 Date 1-29-9
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22897	RHR	239632	Waste Water	8-11				3			JE
2	22900	Inner Plant	5666	Diesel	8-11				3			JL
3	22833	Enviro Sol.	103	Low Flush	8-11	350	C/P		5			JL
4	22864	RHR	239049	Waste Water	8-11				5			JL
5	22863	RHR	239045	n/t Water	8-11				5		NK	JL
6	22905	CES	104	Jindal Water	8-11				3			JE
7	22903	CES	243	Waste Water	8-11				3			JE
8	22904	CES	239	Ethyl Acetate	8-11				3			JE
9	22861	Chem Pack	2573	gel	8-11-12				4		NK	CP
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CES Tankwash Report

Shift 1
 Date 1-29-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 22895	PETRO	714	water	114				3			AR
2 22836	CES	6731	Lube oil	11128				5			JR
3 22858	CES	233	oil/water	118				3			AR
4 22896	CES	235	m & k	114				3			AR
5 22868	ETS	1415	Rewash	11716				3			AR
6 22857	PETRO	1046	Lube oil	11128				5			JR
7 22863	TidePort	1072	SP-8	1184				4			CP
8 22861	Chem Pak	2573	wax	11818				4	N 10		CP
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CES Tankwash Report

Shift 2nd
 Date 1-28-91
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 22879	FIREBIRD	347	Gasoline	8-11				3			JE
2 22599	Baker	PSV020101	Mud/Water	8-11-16				3			JE
3 22890	CES	N48040	Reg. Waste	8-11-4				4			CP
4 22892	Innoplant	60114	DibutylHydrogen	8-11				4			CP
5 22881	CES	N48124	Reg. waste	8-11-16				3			JE
6 22891	Tideport	1501	Rinse	7-11				5			JL
7 22886	Innoplant	2360	Xylene	8-11				5			JL
8 22889	Chempack	2254	Reclean	8-11				5			JL
9	CES	235	Methanol W.	7-11				3			JE
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CES Tankwash Report

Shift 1
 Date 1-28-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22882	CES	2771	waste solids	11816				3			AR
2	22849	CES	2770	waste solids	11816				4			CP
3	22876	tidelport	2012	wake oil	1184				5			AR
4	22873	chem park	942195	WAX	118	1 Drum			3			AR
5	22881	CES	43124	waste solids	11816				4	N/C		CP
6	22872	K.C.	2254	WAX	118				5	N/C		AR
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CES Tankwash Report

Shift On
 Date 1-27-9
 Leadman SL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22880	Innerplant	965	Rain Water	8-11				3			JE
2	22874	F. Rebird	347	Gasoline	8-11				3			JE
3	22875	CES	274824	Class # Sol. ds	8-11-14				3			JE
4	22872	KL Chem Pack	2254	Crystal gel	9-11-12				3			ST
5	22852	K. ndermorgan	V-165	DOT Reg.	8-11-16				4			CP
6	22854	CES	2769	Regulate	8-11-16				4			CP
7	22894	Baker	Vb 25991	Slurry oil	8-11-12-16				4			CP
8	22878	CES	Vb 25124	Waste Sludge	8-11-16				5			TL
9	22841	ELR	25498	oil	8-11-12				5			TL
10	22883	CES	243	W. water	8-11-				5			TL
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CES Tankwash Report

Shift 1
 Date 1-27-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22698	DELTA	LF1276	oil/water	118				5			SR
2	22594	BAKER	VR25191	Slurry oil	112282811				4	N/C		AR
3	22701	CES	276	Base oil	118				5			SR
4	22841	TCR	254988	oil	118				5	N/C		SR
5		CES	TOPE		118				3			ST
6	22872	ISL Chem Pk	2254	crystal gel	118				3	N/C		ST
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CES Tankwash Report

Shift **2nd**
 Date **1-26-9**
 Leadman **51**

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22871	CBS	243	W. Water	8-11-10				4			JE
2	22870	CBS	271	W. Water	8-11-10				5			JE
3	22869	Team	769	Mineral Oil	7-11				5			JE
4	22845	Khemack	2872	gel 205	8-11-12				3			ST
5	22851	T. Depect	7-449	Wash	8-11				5			JE
6	22699	CBS	951V12	Oil Lightends	8-11				4			JE
7	22817	PSC	1517	N/H Sol. 25	8-11-12-18				4			CP
8	22772	Sludge Pump		Re wash	16				5			JE
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CES Tankwash Report

Shift 1
 Date 1-26-99
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22837	JTS	761	sulfuric	11818				3			AR
2	22848	LES	270	waste water	118				5			SR
3	22847	KERSCHER	7025	sodium bisph	118				5			JS
4	22697	Global	ST-2	oil & water	118				3			ST
5	22847	RFR	259007	River water	118				5			SR
6	22850	Global	BIT-2	oil & water	118				5			SR
7	22817	PCS	1517	N/H Solids	11818				4	NK		CD
8	22844	ADLER	RT 762	Regular Urine Sol	11818				4			VL
9	22845	Klem Park	2872	Gel 20g	118				3	NK		ST
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CES Tankwash Report

Shift 2nd
 Date 1-24-09
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22844	AJel	RT-762	Regulated Sol.	Es 8-11-16				5			JL
2	22837	ITS	761	Sulfonic	8-11-18	2500	6		3		n/c	JL
3	22817	PSC	1517	NH4 Solids	18				4		n/c	JE
4	22840	JAM	317	Diesel	8-11				5			JL
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CE3 Tankwash Report

Shift 2nd
 Date 1-23-09
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22790	ITS	7202	Sulfon. CA	8-11-18			3				JL
2	22695	Envia	102	n/a Solids	8-11			5				JL
3	22842	RUR	276112	Carbon	8-11-16			5				JL
4	22840	JAM	317	Diesel	8-11			5			n/c	JE
5	22817	PSC	1517	n/a Solids	18			4			n/c	CP/JL
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CES Tankwash Report

Shift 1
 Date 1-23-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22838	PETRO	973	Additive oil	11.2.8				3			AR
2	22791	CES	235	m E k	11.8				5			JR
3	22835	R.F.R.	258451	River water	11.8				5			JR
4	22836	R.F.R.	259020	River water	11.8				5			JR
5	22819	Kopper S	297	HAZARDOUS	11.8/16				4			J.P.
6	22796	CES	409	POWERS					5			JR
7	22831	BAKER	23253	Water mud	11.8				4			C.P.
8	22747	ETS	T-664	Re wash	11.7				4			C.P.
9	22839	Inner plant	5619	Diesel	11.8				5			JR
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Shift 2nd
 Date 1-22-9
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22794	CBS	228	oil/water	8-11				5			JL
2	22792	CBS	233	oil/water	8-11-10				5			JL
3	22827	Baker	SV29086	EC Rustwater	8-11				5			JL
4	22834	Baker	718	Ext only	14				4			CD
5	22795	J Am	318	Lube oil	8-11-12				3			JL
6	22823	Baker	SV21431	PL Rustwater	8-11				3			JL
7	22793	CBS	241	oil/water	8-11				5			JL
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Shift 1
 Date 1-27-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CEI	100	EXT WASH	11.14				3			AR
2	226077	RFTL	241951	WASTE PH 10	11.8				5			JK
3	22825	Inner Plant	3106	IPA WATER	11.8				4			JK
4	22824	Baker H	ROSE	water mud	11.8				4			JP
5	22821	PETRO	688	crude oil	11.28				3			AR
6	22777	sludge pump		oil	11.8				5			JK
7	22787	Tideport	3006	Fuel oil	11.84				4			CP
8	22786	Firebird	324	crude oil	11.8				5			JK
9	22830	CEI	22830	oil & water	11.8				4			AR
10	22826	cheam Pak	21661	steary Alcohol	11.8				5			JK
11	22829	Enviro	103	com water	11.8				4			CP
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Shift JND
 Date 1-21-09
 Leadman JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22814	R4 Kent	259285	Muddy water	8-11				5			JL
2	22816	Tideport	1052	JP	8-11				5			JL
3	22755	Tideport	1089	Wheel	8-11-12				5			JL
4	22785	Milstead	259285	SH-10 oily water	8-11-7				4			CP
5	22783	Firebird	345	Feedstock	8-11-9				4			CP
6	22815	Tideport	1056	JP-8	8-11				4			CP
7	22822	Tideport	1075	Fuel oil	8-11				3			JE
8	22756	Tideport	1085	solvent R	8-11				3			JE
9	22818	Southcoast	5432	Extenly	14				4			CP JE
10	22822	CE3	239	oily water	8-11-16				3			JE
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Shift 1
 Date 1-21-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22180	CES	249	lube oil	11128				3			ST
2	22232	Baker	21444	crude oil	11128				5			JR
3	22778	Firebird	372	Black oil	11818							
4	22778	Firebird	372	Black oil	11818				3			ST
5	22781	Inner Plant	9028	Fatty Acid	118				4			AR
6	22754	Petro	1042	lube oil	11128				5			JR
7	22752	CES	271	oil & water	118				4			AR
8	22774	CES	228	C-61	11128				4			CP
9	22813	CES	255	Re wash	118				3			ST
10	22757	Inner Plant	189	IPA & water	118				5			JR
11	22756	Tideport	1085	Solvent R	1184				3	N/C		ST
12	22815	Tideport	1056	JP-8	1184				4	N/C		CP
13	22755	Tideport	1089	lube oil	1184				5	N/C		JR
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122737	Andrews	1722	Rewash	117				4			CP
222587	Baker VB	27633	Slurry oil	112816				3			ST
322132	Baker	21444	crude oil	112818				5	N/C		JR
422742	Tideport	T-639	Fuel oil	1184				4			CP
522743	Tideport	T-448	solvent-R	1184				4			CP
622775	Tideport	1037	hub oil	1184				3	N/C		SD
722744	CES	233	Feed stock	11816				4			CP
822746	CES	270	oil & water	118				4			AR
922745	Tideport	971	solvent-R	1184				4	N/C		CP
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22750	Tideport	1051	Gear Oil	8-11				3			JE
2	22751	Tideport	3007	JP-8	8-11				4			JT
3	22782	CES	259	Base oil	8-11				4			JT
4	22753	CES	226	NH Waste W.	8-11				3			JE
5	22775	Tideport	1037	Lube oil	8-11				3			JE
6	22745	Tideport	971	Hydrocarbons	8-11				4			JT
7	22779	CES	104	NH Solids	8-11				4			JT
8	22797	Petro Exp	1048	Lubricant Add	8-11-16				3			JE
9	22749	JAm	318	Mineral Oil	8-11				4			JT
10	22232	Baker	SV2144	HRbm crude oil	8-11-12				5		NL	JL
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CES Tankwash Report

Shift 2nd
 Date 1-19-09
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22611	CBS	105	NH Solids	8-11				4			8 JT
2	22741	CBS	256	NH Waste W.	8-11				3			JE
3	22608	Petro Exp.	LT-1112	Waste water	8-11-10				4			8 JT
4	22678	Baker	NB-29749	Shiny oil	8-11-10				3			JE
5	22609	JAm	317	Lube oil	8-11				4			JT
6	22232	Baker	S/21444	m crude oil	8-11-10				5		n/c	JL
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EPAHQ011000778

CES Tankwash Report

Shift _____
 Date 1-19-07
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22689	ETS	T-474	Re wash	117				4			CP
2	22600	Innerplant	5621	FATTY Acid	118				5			SR
3	22690	RER	254326	WASTE oil	118				4			CP
4	22688	Baker	28978	sour water	118				5			SR
5	22232	Baker	21444	crude oil	1118				5	N/C		SR
6	22678	Baker	29769	Slurry oil	1181218				3	N/C		CP
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CES Tankwash Report

Shift 1
 Date 1-16-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122682	CES	248	Ext wash	1115				5			JK
222684	JAM	317	Lube oil	118				3			SI
322683	Tideport	1093	Fuel oil	1184				4			IL
422232	Baker	21444	crude oil	111218				3	N/C		JE
522739	Baker	23254	sour water	11812				4			JE
622687	Baker	28974	sour water	11812				5			JK
722365	Tideport	104	Rewash	118				5			JK
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EPAHQ011000780

CES Tankwash Report

Shift 2nd
 Date 1-16-09
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22663	CBS	233	Wastewater	8-V				3			ST
2	22661	Lubrizol	241	Waste oil	8-11-10				5			CP
3	22661	CBS	228	Wastewater	8-V				5			CP
4	22363	CBS	V270	Alk Solids	8-11-10-18				3			ST-JL
5	22352	Baker	CV24809	Crude oil	8-11				4			JJ
6	22352	Baker	CV24809									
7	22158	CBS	VB-25030	Has Wash	8-11-10-18				3			ST
8	22660	CBS	282	Ext. only	14				5			CP
9	22659	Inexplant	7143	Acid	8-11				4			JJ
10	22517	QC	21708	Cable Fill	8-11-18				3			ST
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CES Tankwash Shift Report

Shift 2nd
 Date 1-15-09
 Leadman JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1 22683	Tideport	1093	Fuel oil	8-11				4		n/c	JT
2 22738	CES	254	oil/water	8-11				4			JT
3 22354	Baker	CV24810	Crude oil	8-11				3			JE
4 22674	CES	274579	N/H Solids	8-11-16				3			JE
5 22339	CES	276152	Herz waste	8-11-16				5			JL
6 22693	CES	279091	N/H Soil	8-11-16	729045			4			JT
7 —	Tideport	T-527	Rechecked	7-16-				4			JT
8 —	Tideport	104	Rechecked	15				3			JE
9 22686	CES	255	W. water	7-11				5			JL
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CES Tankwash Shift Report

Shift 1
 Date 1-15-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22681	JAM	318	lube oil	11812				5			JR
2	22672	Baker	255 ST	Rewash	118				3			ST
3	22679	Tide Port	T-527	camo highaid	1184				4			CP
4	22736	Mission	6024	crude oil	118				5			JR
5	22694	JAM	312	lube oil	118				3			ST
6	22693	CES	279091	N/H Solids	118186				4	11/1C		CP
7		CES 2-TOTES		Polymer	11818				3			ST
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CES Tankwash Report

Shift

Date

Leadman

1-14-08

Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22670	CES	238	Base oil	118				5			JR
2	22666	TEPCO	946078	crude oil	118				4			CP
3	22368	CES	233	wastewater	11818				3			SI
4	22669	JAM	312	lube oil	118				4			CP
5	22653	RFR	241086	GLYCOL	118				5			JR
6	22654	RFR	605559	Re clean	11816				5			JR
7	22664	RFR	607015	Re clean	11816				5			JR
8	22671	Lees	2085	Tail oil	118				4			CP
9	22595	Baker	225198	Slurry oil	11816				3	NIC		ST
10	22346	CES	276176	Haz-w/solids	11816				5			JR
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Shift

2nd

Date

1-14-09

Leadman

JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22365	T. Leport	104	Napthalene	8-11-16				4			JT
2	22677	Calgon	35-FG	carbon	8-11				5			JL
3	22341	CES	276558	Haz waste	8-11-16				5			JL
4	22673	CES	408	oil/water	8-11-				4			JT
5	22675	CES	270	Resin	9-11-16	110	R/O		3			JE
6	22680	CES	414	Methanol	7-11-16				4			JT
7	—	Baker	VB 25148	Rewash	16				3			JE
8	—	CES	3 Totes		7-11-16				5			JL
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Shift

1 2nd

Date

1-13-09

Leadman

JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22608	Algone	DC-5	Activated Carbon	8-11					4		JT
2	22604	R4R	605559	pump	8-11-14					4		JT
3	22604	R4R	607015	pump	8-11-16					3		JB
4	22652	Enviro	103	oil/water	8-11	35	clp			3		JE
5	22666	Mission	766	pole oil	8-11-12					4		JT
6	22370	Baker	SFRP8020	Firewater	8-11					5		JL
7	22347	Tideport	1089	Eastman Sol.	8-11					4		JT
8	22726	Innesplant	2355	N/A solids	8-11-18-16	150	R/O			3		JE
9	22655	Tideport	1052	Fuel oil	8-11-3					5		JL
10	22657	R4R	241979	Polymer	8-11					5		JL
11	22371	CES	235	Waste Flam.	7-11-16					4		JT
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22645	RFR	239410	water mud	11818				3			ST
2	22369	Baker	28509	waste water	118				4			CP
3	22589	Baker	23629	slurry oil	112816				5			JR
4	22647	CES	276227	HAZ Solids	1181418				5			JR
5	22371	CEB	235	methanol	118				3			ST
6	22372	mission	765	lube oil	118				5			JR
7	22373	mission	798	lube oil	118				5			JR
8	22726	Inoxy Plant	2355	Fatty Acid	11818				3	N/C	A.R.	ST
9	22656	Team	102	choline	118				5			JR
10		Baker 22209	22209	water	118				5			JR
11	22655	Tideport	1092	Fuel oil	118M				5	N/C		JR
12	22347	Tideport	1089	solvent	1184				4	N/C		CP
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CES Tankwash Report

Shift 1 2nd
 Date 1-12-09
 Leadman JZ

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
2	22364	Rain 4 Rent	255186	Sodium Carbonate	8-11				3			JZ
2	22730	RUR	Mats	oil	8-11				5			JL
3	22345	CBS	28008V0	A/H waste	8-11-10				4			JT
4	22595	Baker	VB 25198	Slurry oil	8-11-12-16				3			JE
5	22359	JAM	314	Lube oil	8-11-12				4			JT
6	22589	Baker	V23629	Slurry oil	8-11-12				5		n/c	JL
7	22645	RUR	239410	Drilling mud	8-11-18				3		n/c	JE
8	22369	Baker	SV28509	W. water	8-11				4		n/c	JT
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22356	Tideport	3007		1184				4			CP
2	22353	JAM	318	lube oil	118				5			JR
3	22733	Baker VB	27175	slurry oil	112188				3			ST
4	22649	CES VB	3388	oil/water	11816				5			JR
5	22358	Team	822	oil	118				5			JR
6	22357	Tideport	1052	Diesel	1184				4			CP
7	22360	CES N-44937	N/H Solids	1181618					5			JR
8	22374	PSC VB	27628	N/H Solids	11816				4			CP
9	22595	Baker VB	25198	slurry oil	11281618				3	N/K		ST
10	22359	JAM	314	lube oil	118				4	N/K		CP
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R325

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22355	Tideport	1056	Diesel	8-11				5			JL
2	22350	Tideport	1050	Diesel	8-11				5			ST-JL
3	22650	Tideport	1021	Diesel	8-11				5			JC
4	22348	Global	ST-3	Oil/water	8-11				4			ST
5	22349	Global	BTT-2	Oil/water	8-11				3			JL
6	22337	Baker	SV28989	Brine/water	8-11				4			JT
7	Oigovt	Baker Boxes		oil	18				3			ST-JL
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Shift 1 2nd
 Date 1-9-09
 Leadman DL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	02342	CES	VB-25647	N/H Solids	8-11-16				4			JT
2	02334	Baker	SV23173	RLM Brine water	8-11	150	900		3			JE
3	02554	Baker	SV28993	RLM Brine water	8-11	300			4			JT
4	02337	Baker	SV28989	RLM Brine water	8-11	200	825		4		NK	JT
5	02648	Tideport	1060	Fuel oil	8-11				3			JE
6	02344	CES	2216	N/H Solids	8-11				3			JE
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CES Tankwash Shift Report

Shift 1
 Date 1-9-09
 Leadman Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1		CES	2000	EXT WASH	114				4			CP
2	22730	REFR	MATS	oil water	118				5	N/C		CP
3	22338	Firebird	358	Fuel oil	118				5			SR
4	22646	Enviro	102	oil x water	114				3			SR
5	22340	Lee's	2165	Tall oil	118				3			SR
6	22343	Alcan	35	Fla carbon	112				3			ST
7		CES	283	EXT WASH	118				5			SR
8		CES	296	EXT WASH	118				4			CP
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CES Tankwash Report

Shift

Date

Leadman

6-8-09
Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22475	Instaform	124030	Resin	11818				4	N/C		CP
2	22632	Zach-bi/zach	8247	waste water	11816				5			JR
3	22732	R.F.R.	265020	Feed Stock	118				3	N/C		ST
4	22641	CES	270	N/H solids	11816				5			JR
5	22642	CES	255	oil	118				5			JR
6	22640	CES	263	Base oil	118				5			JR
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CES Tankwash Shift Report

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22475	Institution	M156124	30 Resin	9-11-18	225	5015		4			JT
2	22643	Mission	6229	crude oil	8-11				4			JT
3	22336	Tideport	106	Hydrocarbons	8-11				3			JE
4	22644	LEES	1165	Polymer	8-11-18				5			JL
5	22732	R4R	265020	Feedstock	8-11				3			JE
6	22636	Andrews	1885	Rinse After Ins	7-11-18				5			JL
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Shift

Date

Leadman

1 2nd
1-7-9
JL

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Record all heels to the nearest half gallon.

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22551	Inner plant	2346	Mineral oil	8-11-12-18	150 ⁵⁶ R/L			3			JE
2	22634	Bullz Eye	532	crude oil	8-11				5			JL
3	22638	LEES	2085	Tall oil	8-11				5			JL
4	22639	CES	228	W-Water	7-11-16				5			JL
5	22635	CES	270	Resin	9-11	110	R/O		3			JE
6	22475	Institute form	MLS6124030	Resin	9-11-18				4		n/c	JT
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CES Tankwash Report

Shift 1
 Date 1-7-09
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22630	Firebird	370	used lube	114				3			ST
2	22631	CES	280	EXT wash	114				3			ST
3	22597	RFR	265502	oil & water	118				3			ST
4	22716	Baker F	25269	crude oil	118186				5			ST
5	22475	INSTARM	124030	Resin	11818				4	N/C		CP
6	22592	CES	241	w/water	114				3			AR
7	22593	Tide Power	03JB/T8	crude oil	118				4			AR
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CES Tankwash Report

Shift _____
 Date 1-6-99
 Leadman Armando
 Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
 F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22590	Lee's	935	Tail oil	118				4			CP
2	22725	Tidepon	T-480	Ext wash only	1115				3			ST
3	22586	Baker SP	27279	water	118				5			JR
4	22728	Bu11211	3249	Crude oil	118				5			JR
5	22729	ETS	N-46842	Rewash	117				5			JR
6	22286	Baker SP	001	N/A Solids	118				3	N/C		ST
7	22375	CES	255	Rewash	118				4			CP
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Shift

Date

Leadman

Record all heels to the nearest half gallon.

CES Fairview

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22598	CES	259	Waste cor. liquid	8-11-16				3			JE
2	22080	Baker	SP001	n/H Solids	8-11-16				3			JE
3	22475	Institutoform	MLS6124030	Resin	18				4		n/c	JE-JL
4	22731	RUR	256477	w/ water	8-11				3			JE
5	22716	Baker	FMX252690	Storm Water	8-11				5		n/c	JL
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Shift

Date

1-5-89

Leadman

Armando

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22581	CES	249	Base oil					4			CP
2		CES	100	Ext wash	1114				3			AR
3	22580	Innerplant	9028	crude oil	11128				5			JR
4	22721	CES	276548	Rewash	11816				4			CP
5	22480	CES	239	lube oil	11128				5			JR
6	22720	Baker G	25751	water sludge	118				3			ST
7	22722	Firebird	357	Feed Stock	119				4	N/C		CP
8	22573	BES	258260	Rewash	118				4			CP
9	22723	Global	ST-3	oil/water	118				5			JR
10	22583	Innerplant	249	Fatty Acid	118				3	N/C		ST
11	22584	Tideport	1056	solvent	1184				5	N/C		JR
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
TL												

CES Tankwashing Report

Shift

Date

Leadman

12nd
1-5-09
JL

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel
F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22727	CES	259	Resin	9-11-10	110 ^{3/4} 1/2			3			JE
2	22583	INNERplant	249	Fatty Alcohol	8-11				3			JE
3	22569	R4R	254640	Ship water	8-11				5			JL
4	22724	CES	274442	n/H Solids	8-11-10				3			JE
5	22585	CBS	264	Lightends	8-11-10				4			JT
6	22307	JAm	312	Lube oil	8-11-10				4			JT
7	22722	Firebird	357	Feed Stock	10-11				4			JT
8	22584	Tideport	1056	Naptha	8-11				5			JL
9	22586	Baker	SV27279	Wash Water	8-11				5		n/c	JL
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
TL												

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
122568	RFR	255455	Drilling mud	118				3			JR
222575	CES	296	Ext wash	1114				4			CP
322541	RFR	720050	crude oil	11128				5			JR
422577	CES	238	methanol water	118				3			ST
522580	Inner Plant	9028	crude oil	118				5	N/C		JR
622578	JAM	313	lube oil	118				3			ST
722579	JAM	317	lube oil	118				4			CP
822581	Tidepon	106	Fuel oil	1184				3			ST
9											
10											
11											
12											
13											
14											
15											
16											
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19											
20											
21											
22											
23											
TL											

Shift

Date

Leadman

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22574	CES	27654	Rearwash	8-11-16				4			JL
2	22573	CES	258760	W/water	8-11				4			JL
3	22331	RHR	837	Mats & spill guard	8-11				5			JL
4	—	CES	387253	Rearwash	7-11				5			JL
5	22576	CES	256	Oil/water	8-11-16				5			JL
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
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17												
18												
19												
20												
21												
22												
23												
TL												

Shift _____

Date _____

Leadman _____

Record all heels to the nearest half gallon.

Cleaning Process Key: CF - Cold Flush, HF - Hot Flush, DI - Diesel

F/S - Flush/Steam, C - Caustic, D - Detergent, P - Presolve, Ex - Exterior

	Work Order No.	Customer Name	Unit #	Product Name	Process	Heel (gallons)	Drum No.	Time Request	Bay No.	Time on Bay	Time off Bay	Cleaner's Initials
1	22572	CES	270	Waste water	118				4			CP
2	22570	CES	233	Toluene	118				3			ST
3	22568	RER	255455	Drilling mud	118				3	N/C		SL
4	22708	Tideport	3012	Fuel oil	118				4			CP
5	22713	CES	TANK	asphalt	11218				3			ST
6	22714	CES	241	Resin	11812				4			JPAR
7	22531	ETS	T-772	Re wash	117				5			JR
8	22573	CES	258260	oil & water	11818				4	N/C		CP
9	22331	R.F.R.	57837	Diesel	118				5	N/C		JR
10												
11												
12												
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17												
18												
19												
20												
21												
22												
23												
TL												

CES Environmental Services
 Cleaning Division
 Houston, TX 77021
 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22665

Customer: <i>Mission</i>	Date: <i>1/13/09</i>
Address:	Time: <i>13:55</i>
Tractor <i>2534</i>	Need By:
Trailer / Container Number <i>766</i>	Dropped By: <i>AK Jones</i>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>pale oil</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>21.0</i> #2 <i>21.0</i> #3 <i>21.0</i> #4 <i>21.0</i> #5 <i>21.0</i>
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
5 Steam Only (Per Hour)		Signature: <i>JT</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<i>/</i>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<i>/</i>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: *JT* Date *1-13-9*
 Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

EPAHO011000804

18131720
ROLEUM CARRIERS, INC.

KEY

ON, TX 77075

MINISTRATIVE

PHONE HOUSTON A/C (713) 943-8250

TRIP TIME OUT OF TERMINAL

Date 12/22/08 Time

TRIP TIME RETURN TO TERMINAL

Date 12/22/08 Time

MILEAGE REPORT

End 174326
Begin 173826
Total 500

Shipper VALERO LP
Address 301 LEROY ST
Address HWY 281 @ HWY 72
Origin Plant or Location THREE RIVERS TX 78077

	DATE	TIME		DATE	TIME
Requested to Load	12/19/08	PRE 10:00	Requested to Unload	12/22/08	00:00
Arrived to Load		1300 pm	Arrived to Unload		530 AM
Started Loading			Started Unloading		
Finished Loading			Finished Unloading		
Driver Released		1330 pm	Driver Released		715 AM
Total Time Loading		30 MIN	Total Time Unloading		1 HR 45 MIN

EQUIPMENT ORDERED:

Hose Ordered ft. Pump Blower

Charge To

NYNAS USA

Cust. No.

09477

Driver (1) No. T322 Driver (1) TREVINO, ABEL
Driver (2) No. Driver (2) P/L Driver P/L Driver No.
Shipper B/L 200811220 Cust. Order No. 5/ OT 9532 TNS 041

Consigned To VOPAK USA INC
Address BATTLEGROUND RD
Address
Destination DEER PARK TX

COMP. NO.	PRODUCT DESCRIPTION	TANK INCHES BEFORE	TANK INCHES AFTER	GROSS/ORDERED	TEMP	NET/DELIVERED	RATE	CHARGES
	REFER TO SHIPPER'S BILL OF LADING FOR D.O.T. DESCRIPTION T9 "60 PALE"			4500	BAI	61407		

THIS WILL CERTIFY THAT CARRIER TRUCK PUMP WAS USED TO DISCHARGE THIS LOAD.

Consignee Signature

X

@

Extra Hose Furnished	Ft. @	
Loading Demurrage	Hrs. @	Charge To No.
Unloading Demurrage	Hrs. @	Charge To No.
Stop in Transit Town or Location		
Diversion Town or Location		
Tank Cleaning		
Other Charges	Purchase Order No: S6 34265/ OT 9532	

BILLING EXPLANATION

Received in Good Order X Date 12/22/08 Driver X [Signature] TOTAL CHARGES

Loading Location DEMURRAGE EXPLANATION Unloading Location

Shipper X Driver X Consignee X Driver X
CHG: ☐ YES ☐ NO PD: ☐ YES ☐ NO TERMINAL MANAGER X

TARIFF MILES	TARIFF	ITEM NO.	TRACTOR NO.	TRAILER NO.	PRELOAD TRACTOR
223			2856	7198	

Tanks pointed out by X

Carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of the commodity as described by the shipper. Received subject to tariffs and/or contracts in effect on the date of issuance hereof.

MPC25 (Rev. 4/02)

CUSTOMER COPY

EPAH0011000805

Environmental Services

TANK WASH WORK ORDER

Cleaner / Tank Cleaning Division
4 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

22736

PO #	Customer: <u>Mississ</u>	Date: <u>1/15/09</u>
Tractor <u>2534</u>	Address:	Time: <u>9:51</u>
Trailer / Container Number <u>6042</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Crude oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>100</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>IR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry <u>✓</u>		
9 Caustic Wash & Dry <u>✓</u>		
10 Caustic Wash, Rinse & Dry <u>✓</u>		
11 Waste Water Surcharge <u>✓</u>		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: IR Date: 1-15-09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

EPAHO011000806

MISSION PETROLEUM CARRIERS, INC.

8450 MOSLEY

HOUSTON, TX 77075

ADMINISTRATIVE

PHONE HOUSTON A/C (713) 943-8250

TRIP TIME OUT OF TERMINAL	
Date <u>1-1-09</u>	Time
TRIP TIME RETURN TO TERMINAL	
Date	Time

MILEAGE REPORT	
End	
Begin	
Total	

	DATE	TIME		DATE	TIME
Requested to Load	<u>1/1</u>		Requested to Unload	<u>1/1</u>	
Arrived to Load			Arrived to Unload		
Started Loading			Started Unloading		
Finished Loading			Finished Unloading		
Driver Released			Driver Released		
Total Time Loading			Total Time Unloading		

EQUIPMENT ORDERED:		Hose Ordered	ft.	Pump	Blower
Charge To	<u>Flat Hills Resources</u>		Cust. No.	<u>F9163</u>	
Driver (1) No. <u>A-594</u>	Driver (1)	<u>Martin Alvarado</u>		WB	<u>30444824</u>
Driver (2) No.	Driver (2)	P/L Driver	P/L Driver No. <u>3784255</u>		
Shipper B/L <u>0037</u>	Cust. Order No.	TN		<u>81</u>	

Shipper Address	<u>Enskine Energy</u>	Consigned To	<u>F.H.R.</u>
Address	<u>Sullivan #22 Lsc-89291</u>	Address	<u>2840</u>
Origin Plant or Location	<u>Falfurrias TX</u>	Destination	<u>Prement TX</u>
	<u>E5125</u>		<u>F2804</u>

COMP. NO.	HM	PRODUCT DESCRIPTION	TANK INCHES BEFORE	TANK INCHES AFTER	GROSS/ORDERED	TEMP	NET/DELIVERED	RATE	CHARGES
		GASOLINE (SUPER NO LEAD)							
		3. UN1203, II							
		GASOLINE (NO LEAD)							
		3. UN1203, II							
		GASOLINE (PLUS)							
		3. UN1203, II							
		DIESEL FUEL							
		3. NA1993, III							
		<u>Petroleum Crude Oil 3 PG II</u>							
		<u>UN 1267 Flammable liquid</u>							

THIS WILL CERTIFY THAT CARRIER TRUCK PUMP WAS USED TO DISCHARGE THIS LOAD. Consignee Signature X @

Extra Hose Furnished	FL @	
Loading Demurrage	Hrs. @	Charge To No.
Unloading Demurrage	Hrs. @	Charge To No.
Stop in Transit Town or Location		
Diversion Town or Location		
Tank Cleaning		
Other Charges	<u>Tank #1</u>	

BILLING EXPLANATION High Bott. 17" Top Ga. 7'-0"
(REJECT) (Not in Hand Held)

Received in Good Order <u>X</u>	Date <u>1-1-09</u>	Driver <u>X</u>	TOTAL CHARGES
Loading Location	DEMURRAGE EXPLANATION		Unloading Location

Shipper <u>X</u>	Driver <u>X</u>	Consignee <u>X</u>	Driver <u>X</u>
CHG: <input type="checkbox"/> YES <input type="checkbox"/> NO	TERMINAL	CHG: <input type="checkbox"/> YES <input type="checkbox"/> NO	TERMINAL
PD: <input type="checkbox"/> YES <input type="checkbox"/> NO	MANAGER <u>X</u>	PD: <input type="checkbox"/> YES <input type="checkbox"/> NO	MANAGER <u>X</u>

TARIFF MILES	TARIFF	ITEM NO.	TRACTOR NO.	TRAILER NO.	PRELOAD TRACTOR
			<u>2639</u>	<u>6042</u>	
Tanks pointed					

Emergency Chemfree.
1-800-424-9300

22643

Customer:	<u>MISSION</u>	Date:	<u>1-8-9</u>
Tractor:	<u>2471</u>	Address:	
Trailer / Container Number:	<u>6229</u>	Dropped By:	
		Time:	<u>12:20 PM</u>
		Need By:	

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>CRUDE OIL UN1267</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) # <u>110</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JT</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments: <u>Tank has old product</u>
8 Detergent Wash, Rinse & Dry	<u>✓</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>✓</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JT Date 1-8-9

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: Paul Crane

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CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

PETROLEUM CARRIERS, INC. K TRUCK RUN TICKET

**PRESS HARD
USE A BALL POINT PEN**

TO				CUSTOMER NO.				WAYBILL									
LEASE NAME <i>Devon Energy</i> <i>R.D. King #2</i>												COUNTY <i>Montgomery</i> STATE <i>TX</i>					
LEASE NO. <i>27726</i>				DISTRICT NO. <i>76</i>				DRIVER NO. <i>5656</i>				DRIVER <i>RICHARD L. STARNES</i>					
MILEAGE REPORT:				END: <i>388,568</i>				BEGIN: <i>388,554</i>				TOTAL: <i>14</i>					
MONTH <i>3</i>		DAY <i>3</i>		YEAR <i>09</i>		TANK NO. <i>32138</i>				TANK SIZE <i>20'400</i>				TICKET NO. <i>6077112</i>			
GAUGE		OIL LEVEL						TEMP		SALT & WATER				GROSS BARRELS			
		FEET		INCHES		1/4 INCH				FEET		INCHES					
1 ST		<i>11</i>		<i>2</i>		<i>0</i>		<i>68°</i>		<i>0</i>		<i>3</i>		<i>190</i>			
2 ND		<i>1</i>		<i>8</i>		<i>0</i>		<i>68°</i>		<i>0</i>		<i>3</i>					
OBSERVED GRAVITY <i>36.0</i>				& TEMPERATURE <i>60</i>				SEDIMENT & WATER <i>3/10</i>				OIL TRUCKED BY <i>Mission Pet Carriers</i>					
OIL TRUCKED TO <i>KAREN STA.</i>								TRUCK NO. <i>2496</i>				TRAILER NO. <i>6054</i>					
TURNED ON		FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>X Richard L. Starnes</i>								DATE <i>3/3/09</i>		TIME <i>16:00 PM</i>					
		SIGNATURE OF WITNESS (OR WAIVER NO.) <i>X</i>								OFFSEAL <i>N/A</i>							
SHUT OFF		FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>X Richard L. Starnes</i>								DATE <i>3/3/09</i>		TIME <i>16:30 PM</i>					
		SIGNATURE OF WITNESS (OR WAIVER NO.) <i>X</i>								ONSEAL <i>N/A</i>							
NO. UNITS/TYPE		HM		PROPER SHIPPING NAME, HAZARD CLASS UN/NA NUMBER								QUANTITY					
<i>H-TANK</i>		<i>✓</i>		<i>PETROLEUM CRUDE OIL, 3, UN 1267 II (CRUDE OIL)</i>								ESTIMATE GROSS		<i>190</i>			
												ACTUAL NET					

IN THE EVENT OF AN EMERGENCY INVOLVING THIS SHIPMENT THAT ENDANGERS LIFE OR PROPERTY

CALL: CHEMTREC 800-424-9300

REMARKS

THIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

MISSION PETROLEUM CARRIERS, INC., SHIPPER

OIL COVERED BY THIS RUN TICKET IS CONSIDERED TO BE RECEIVED BY MISSION PETROLEUM CARRIERS, INC. ON THE FIRST DATE SHOWN ABOVE.



Miles 7

Environmental Services

Tank Cleaning Division
 1999 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

17192

#	Customer: <i>Mission</i>	Date: <i>3.17.09</i>
Tractor <i>2851</i>	Address:	Time: <i>1:59p</i>
Trailer / Container Number <i>795</i>	Dropped By: <i>[Signature]</i>	Need By: <i>Waiting</i>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>Base oil</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>21.0</i> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <i>0</i> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <i>JL</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: *JL* Date: *3-17-9*

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Bill of Lading / Delivery Manifest & Receipt

document evidences a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY: [Signature] P.O. #: _____

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300

EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

Manifest: 200903038	Carrier: MISSION TRANSPORT	
Date: 03/17/09	Carrier No: 33	Loaded At: THREE RIVERS, TX (B)-DS INV.
Time in: 06:50:00	Truck No: 2851	P.O. BOX 490
Time out: 07:31:00	Trailer: 795	THREE RIVERS, TX 78071
Trans: TRUCK/TRAILER	Contract: S635902	EPA#4006

<u>Sold To:</u>	<u>Ship To:</u>	<u>Project:</u>
Vopak Terminal Deer Park, TX c/o Nynas USA, Inc 2759 Battleground Road DEER PARK, TX 77536-0897	Vopak Terminal Deer Park, TX c/o Nynas USA, Inc 2759 Battleground Road DEER PARK TX 77536-089	Deer Park* TX

Comments:

Seller: Nynas USA Inc Acct.: 244318
Freight: PREPAID Seals: 70843,70844

PRODUCT AND CLASSIFICATION	UCM	Tare	Gross	Net
T 300 BASE OIL	GAL			6,125.00
	MT	14.03	35.99	21.95
	LBS	30,940	79,340.00	48,400.00
Tank/Batch: 218/90303	Temp: 150.00 Grav: 0.9488	TONS: 39.67		24.2

Loaded By: EGARIA

proc_oils

Environmental Services
 Cleaning Division
 Houston, TX 77021
 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

17193

Customer: <u>Y Mission</u>	Date: <u>3-17-09</u>
Tractor: <u>2852</u>	Time: <u>2:00p</u>
Trailer / Container Number: <u>794</u>	Need By: <u>Waiting</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Base oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 <u>1</u> #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		_____
19 Hydroblaster (# Hours)		_____
20 Solvent Wash (Green Stripper)		_____
21 Passivation		_____
Close Cleaning		_____
ump Cleaning		_____

Cleaned By: JE Date: 3-17-9

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

Environmental Services

/ Tank Cleaning Division
 Riggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25329

Job #	Customer: <u>Mission Petroleum</u>	Date: <u>3-19-09</u>
Tractor: <u>2792</u>	Address:	Time: <u>11:30 AM</u>
Trailer / Container Number: <u>6054 *</u>	Dropped By: <u>David Lewis</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Crude oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>30</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>10</u> #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>10</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>10</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>ED</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	<u>/</u>	
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date: _____

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000813

Bill of Lading / Delivery Manifest & Receipt

If this document evidences a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY: 

P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300

EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

Manifest:	200903041	Carrier:	MISSION TRANSPORT	
Date:	03/17/09	Carrier No:	33	Loaded At:
Time in:	07:22:00	Truck No:	2852	THREE RIVERS, TX (B)-DS INV.
Time out:	07:51:00	Trailer:	797	P.O. BOX 490
Trans:	TRUCK/TRAILER	Contract:	S635853	THREE RIVERS, TX 78071
				EPA#4006

Sold To:

Ship To:

Project:

Vopak Terminal Deer Park, TX
c/o Nynas USA, Inc
2759 Battleground Road
DEER PARK, TX 77536-0897

Vopak Terminal Deer Park, TX
c/o Nynas USA, Inc
2759 Battleground Road
DEER PARK TX 77536-089

Vopak Terminal Deer Park,
Deer Park* TX

Comments:

Seller: Nynas USA Inc

Acct.: 244318

Freight: PREPAID

Seals: 70845, 70846

PRODUCT AND CLASSIFICATION	UOM	Tare	Gross	Net
T 300	BASE OIL			6,064.00
	GAL			
	MT	13.95	35.69	21.74
	LBS	30,760	78,680.00	47,920.00
Tank/Batch: 218/90303	Temp: 150.00	Grav: 0.9488	TONS: 39.34	23.96

Loaded By: EMARSA

prod_oils

Environmental Services

Cleaning Division
 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25452

#	Customer: <u>M.P.C.</u>	Date: <u>3/30/09</u>
Tractor <u>2847</u>	Address:	Time: <u>14:43</u>
Trailer / Container Number <u>816</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Dase 0.1</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) # <u>7</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) # <u>10</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) # <u>16</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor # <u>M</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>[Signature]</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		
8 Detergent Wash, Rinse & Dry	<u>/</u>	Comments:
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: MC Date: 3/30/09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000815

Bill of Lading / Delivery Manifest & Receipt

When a delivery is made into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation under applicable regulations of the Department of Transportation.

The carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it does not observe any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY:

P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300

EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

Manifest: 200903414	Carrier: MISSION TRANSPORT	
Date: 03/27/09	Carrier No: 33	Loaded At:
Time in: 14:33:00	Truck No: 2847	THREE RIVERS, TX (B)-DS INV.
Time out: 15:10:00	Trailer: 816	P.O. BOX 490
Trans: TRUCK/TRAILER	Contract: S636151	THREE RIVERS, TX 78071
		EPA#4006

<u>Sold To:</u>	<u>Ship To:</u>	<u>Project:</u>
Vopak Terminal Deer Park, TX	Vopak Terminal Deer Park, TX	
c/o Nynas USA, Inc	c/o Nynas USA, Inc	Vopak Terminal Deer Park,
2759 Battleground Road	2759 Battleground Road	
DEER PARK, TX 77536-0897	DEER PARK TX 77536-089	Deer Park* TX

Comments: ICOM

Seller: Nynas USA Inc	Acct.: 244318
Freight: PREPAID	Seals: 69995,69996

PRODUCT AND CLASSIFICATION	UOM	Tare	Gross	Net
T 9US	BASE OIL	GAL		6,447.00
	MT	13.64	35.72	22.08
	LBS	30,080	78,760.00	48,680.00
Tank/Batch: 114/90312	Temp: 90.40	Grav: 0.9066	TONS: 39.38	24.34

WB 3848611

Loaded By: JT

proc_oils

Environmental Services

TANK WASH WORK ORDER

Tank Cleaning Division
 11000 S. Loop West, Suite 100 • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25939

PO #	Customer: <u>MDC</u>	Date: <u>5/28/09</u>
Tractor: <u>2851</u>	Address:	Time:
Trailer / Container Number: <u>8116</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Base</u>	<u>0.1</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 <u>10.9</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: _____
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
8 Detergent Wash, Rinse & Dry	<input checked="" type="checkbox"/>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<input checked="" type="checkbox"/>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Loss Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Inspected By: S.T. Date 5-29-09

Inspected By: _____ Date _____

Print Name: Dominick Date 5-29-09

Signature: [Signature]

Environmental Services
 Tank Cleaning Division
 4 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25849

#	Customer: <u>M.P.C.</u>	Date: <u>5/15/09</u>
Locator: <u>2805</u>	Address: <u> </u>	Time: <u>10:03</u>
Trailer / Container Number: <u>1062</u>	Dropped By: <u>Paul Chene</u>	Need By: <u> </u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
<u>1</u>	<u>Crude oil</u>			

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
Air Dry		Oxygen (19.5% -23.5%) #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
Quick Rinse		LEL (<10%) #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
Cold Water Rinse		CO2 (<35 ppm) #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
Hot Water Rinse		Toxic Vapor #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
Steam Only (Per Hour)		Signature: <u> </u>
Steam & Dry		Stripper Usage: <u> </u>
Rinse, Steam & Dry		Comments: <u> </u>
Detergent Wash, Rinse & Dry		
Caustic Wash & Dry		
Caustic Wash, Rinse & Dry		
Waste Water Surcharge		
Solvent Wash (Diesel # Hours)		
Solvent Wash (Stripper)		
Exterior Tractor Wash		
Exterior Trailer Wash (w/o Internal)		
Exterior Trailer Wash (with Internal)		
Exterior Acid Brite Wash		Authorized Additional Services: <u> </u>
Hand Labor (# Men / # Hours)		
Hydroblaster (# Hours)		
Solvent Wash (Green Stripper)		
Passivation		
Pre Cleaning		
Post Cleaning		

Inspected By: JE Date: 5-15-09

Accepted By: Date:

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CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Date:

Signature:

MISSION PETROLEUM CARRIERS, INC. TANK TRUCK RUN TICKET

**PRESS HARD
USE A BALL POINT PEN**

CHARGE TO				CUSTOMER NO.				WAYBILL			
OPERATOR Devon Energy											
LEASE NAME LAKE Creek #4						COUNTY Montgomery			STATE TX.		
LEASE NO. 26518				DISTRICT NO. 76		DRIVER NO. 5656		DRIVER RICHARD L. STARNES			
MILEAGE REPORT:				END: 334,731		BEGIN: 334,719		TOTAL: 12			
MONTH 4	DAY 28	YEAR 09	TANK NO. LACT			TANK SIZE 15'300-20'400			TICKET NO. 6077291		
GAUGE	OIL LEVEL			TEMP	SALT & WATER		GROSS BARRELS				
	FEET	INCHES	1/4 INCH		FEET	INCHES					
1 ST							190				
2 ND											
OBSERVED GRAVITY 41.0		& TEMPERATURE 76°		SEDIMENT & WATER 4/10		OIL TRUCKED BY Mission Pet Carriers					
OIL TRUCKED TO KAREN STA.				TRUCK NO. 2621				TRAILER NO. 6062			
TURNED ON	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) X Richard L. Starnes					DATE 4/28/09		TIME 9:00 AM			
	SIGNATURE OF WITNESS (OR WAIVER NO.) X					OFFSEAL N/A					
SHUT OFF	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) X Richard L. Starnes					DATE 4/28/09		TIME 9:30 AM			
	SIGNATURE OF WITNESS (OR WAIVER NO.) X					ONSEAL N/A					
NO. UNITS/TYPE	HM	PROPER SHIPPING NAME, HAZARD CLASS UN/NA NUMBER						QUANTITY			
1-Lact Unit	✓	PETROLEUM CRUDE OIL, 3, UN 1267 II (CRUDE OIL)						ESTIMATE GROSS	190		
								ACTUAL NET			

IN THE EVENT OF AN EMERGENCY INVOLVING THIS SHIPMENT THAT ENDANGERS LIFE OR PROPERTY

CALL: CHEMTREC 800-424-9300

REMARKS

meter START = 1676230.0
meter Finish = 1676420.0
T.B. 8'0

THIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

MISSION PETROLEUM CARRIERS, INC., SHIPPER

COVERED BY THIS RUN TICKET IS CONSIDERED TO BE RECEIVED BY MISSION PETROLEUM CARRIERS, INC. ON THE FIRST DATE SHOWN ABOVE.



* 6077291 *

lesla

Environmental Services

ner / Tank Cleaning Division
 04 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25765

PO #	Customer: <u>M. P.C.</u>	Date: <u>9/01/03</u>
Tractor <u>2471</u>	Address:	Time: <u>13:39</u>
Trailer / Container Number <u>1030</u>	Dropped By: <u>Paul Cano</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Crude oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>24.0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
2 Quick Rinse		LEL (<10%) #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
4 Hot Water Rinse		Toxic Vapor #1 <u> </u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
5 Steam Only (Per Hour)		Signature: <u>SL</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CH Date: 9-5-03

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

CRUDE OIL RUN TICKET

GATHERING

TICKET#: 8303968 BUSINESS MONTH: 2009-04
TANK#: 242666 DISTRICT: 216
TANK SIZE: 436 bbls TANK HEIGHT: 16-00-00/04

OPERATOR: 115674:SHERIDAN PROD CO LLC
LEASE: 35802 SCHUMACHER WILHELM UT #1_H
FEDERAL #:
STATE CODE: 000322581 0000
LEGAL DESC:
COUNTY: BURLESON STATE: TX
SHIPPER: Flint Hills Resources, L.P.
CARRIER: Flint Hills Resources, L.P.
DESTINATION: 01711:Caldwell Tk Station
OTHER ID:

	DATE	TIME	OIL LEVEL FT IN FRACT	TANK TEMP	BS&W BOTTOM FT IN FRACT
OPEN	04-30-2009	01:16 PM	08-03-03/04	67.0	00-06-00/04
CLOSE	04-30-2009	01:49 PM	01-04-00/04	69.0	00-08-00/04

---OBSERVED---		GRAVITY	S&W	INCRUSTATION FACTOR
GRAVITY	TEMP	at 60 DegF	(fraction)	OR ADJUSTMENT
40.8	71.0	39.8	0.00600	1.00000

REID VAPOR	RVP	GOV BBLS:	190.24
PRESSURE	ADJUSTMENT	GSV BBLS:	189.60
0.0	1.00000	NSV BBLS:	188.46

REMARK:

EMERGENCY CONTACT: CHEMTREC 800/424-9300

DRIVER#: 0348 TRUCK#: 2802 TRAILER#: 6310

QTY	HM	COMMODITY
T/T	X	Petroleum Crude Oil, 3, UN1267, PG II

"This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation. Subject to section 7 of the terms and conditions of the applicable bill of lading. If this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges."

(REFERENCE ERG FOR EMERGENCY RESPONSE INFORMATION)

OPEN SIGNATURES

SEAL OFF:

X

CARRIER REPRESENTATIVE: Ronnie Ott

SEAL ON:

EPAHO011000821



2300 Hwy 365, Ste 400
Nederland, Texas 77627
Ph: 281-385-6700
Fax: 281-385-6705

☐ Urgent ☐ Reply ASAP ☒ Please Review ☐ Please Comment ☐ For Your Information

Date: 7/30/2009

Send To: CES Environmental

Attention: James Pharms

Office Location: _____

Fax Number: 713.676.1676

Sent by: Brenda

Location: Mont Belvieu, Texas

Total Pages, including cover: 8

Comments: Last contained for Trlr 372 & MSDS

CONTAINS HAZARDOUS MATERIALS

STRAIGHT BILL OF LADING - SHORT FORM - Original - Not Negotiable

PETROLEUM EXPRESS
2300 HWY. 365, SUITE 400
(Carrier) NEDERLAND TEXAS 77627

Shipper's No. _____

SCAC. _____

Carrier's No. PE 8726

RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established by the carrier and are available to the shipper, on request, and all applicable state and federal regulations.

at Houston TX date 7-30-07 from ACB International LLC

The Property described below, in accordance with order, receipt as noted (contents and classification of contents of packages), marked, consigned, and delivered as indicated below, which said company (the word company being understood throughout this contract as meaning any person or corporation in possession of the property under this contract) agrees to carry to its usual place of delivery at said destination, if on its own road or its own water line, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interpreted in all or any of said property, that every service to be performed hereunder shall be subject to all the conditions not prohibited by law, whether printed or written, herein contained (as specified in Appendix B to Part 1035) which are hereby agreed to by the shipper and accepted for himself as his consignee.

(Mail or street address of consignee for purposes of notification only.)

TO: Cyto Industries
Consignee South Coast Terminals
Street 7401 Westmoreland Rd
Destination Houston TX 77029

FROM: ACB International LLC
Consignee 3641 Elm 1663
Street Honolulu, HI
Origin Honolulu, HI Zip 96813

Route: _____

Delivering Carrier Petroleum ExpressTrailer Initial/Number 110-372

U.S. DOT Hazmat Reg. Number

060506 551 0370Q

HM	Description of articles, special marks, and exceptions	Quantity	Class	Proper Name	Packing Group	Weight and Measure	Class or Code	Identification Number	Technical Name
	GE-1143-20T-DOT Regulated								
	45,000 LB (5422 gal) Density								
	= 8.30 LB/gal								

Remit C.O.D. to:

Address:

City:

Ruck
State: _____ Zip: _____

C.O.D.

AMT:

\$

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the following statement:
The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

C.O.D. FEE

Prepaid ☐Collect ☐

FREIGHT CHARGES

Prepaid ☐ Collect ☐

If the shipment moves between two parties by a carrier by vessel, all law regulations that the bill of lading shall state whether it is carrier's or shipper's receipt, and the rate is subject to rules. Shippers are required to make shipment in fitting the nature or character of the property. The shipper or consignee shall be responsible for the property is hereby

This is to certify that the above named materials are properly described, classified, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

PLACARDS REQUIRED

PLACARDS REQUIRED

SHIPPER:

PER:

DATE:

CARRIER: Petroleum ExpressPER: CarrollDATE: 7-30-07

EMERGENCY RESPONSE

TELEPHONE NUMBER: ()

Permanent post office address of shipper

Marked at all times the Hazardous Material is in transportation including storage incidental to transportation (172.104)

CONTAINS HAZARDOUS MATERIALS

CONTAINS HAZARDOUS MATERIALS

CONTAINS HAZARDOUS MATERIALS

MATERIAL SAFETY DATA SHEET

GE-1143

Molex Company (Marketer)
P.O. Box 1151
Athens, AL 35612

Phone: (256) 233-5165
Emergency: CHEMTREC (800) 424-9300
Effective Date: 7/15/00

1. COMPOSITION / INFORMATION ON INGREDIENTS:

Propylene oxide methanol adduct CAS# 037286-64-9 98%

2. HAZARDS IDENTIFICATION:

EMERGENCY OVERVIEW

Yellow to dark brown liquid. Low odor. Causes eye irritation.

POTENTIAL HEALTH EFFECTS (See Section 10 for toxicological data.)

EYE: May cause moderate eye irritation. May cause moderate corneal injury.

SKIN: Prolonged or repeated exposure not likely to cause significant skin irritation. A single prolonged exposure is not likely to result in the material being absorbed through the skin in harmful amounts. Prolonged or repeated exposure to very large amounts of component(s) in this mixture may cause narcosis (drowsiness).

INGESTION: Single dose oral toxicity is considered to be low. Small amounts swallowed incidental to normal handling operations are not likely to cause injury; swallowing amounts larger than that may cause injury. Observations in animals include tremors and convulsions.

INHALATION: Excessive exposure may cause irritation of the eyes, upper respiratory tract, and lungs. Signs and symptoms of excessive exposure may be anesthetic or narcotic effects.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS: Signs and symptoms of excessive exposure may be anesthetic or narcotic effects. Repeated excessive exposures may cause liver and possibly kidney effects.

TERATOLOGY (BIRTH DEFECTS): Birth defects are unlikely from the components, propylene glycol monomethyl ether and tripropylene glycol monomethyl ether. Exposures having no adverse effects on the mother should have no effects on the fetus.

3. FIRST AID:

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, seek medical attention. Do not induce vomiting unless directed to do so by medical personnel.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, oxygen should be administered by qualified personnel. Call a physician or transport to a medical facility.

NOTE TO PHYSICIAN: No specific antidote. Supportive care. Treatments based on judgment of the physician in response to reactions of the patient.

MATERIAL SAFETY DATA SHEET

GE-1143

4. FIRE FIGHTING MEASURES:

Flammability Data

EXPLOSIVE No

FLAMMABLE No

COMBUSTIBLE No

PYROPHORIC No

FLASH POINT: 104 Deg. C (220 Deg. F) **TEST METHOD:** Cleveland Open Cup

AUTOIGNITION TEMPERATURE: No data

FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): LEL - No data UEL - No data

NFPA RATINGS: Not established

HMIS RATINGS: Health - 1 Flammability - 1 Reactivity -0

EXTINGUISHING MEDIA: Alcohol foam, carbon dioxide, dry chemical, water spray

FIRE FIGHTING TECHNIQUES: Use water to cool containers exposed to fire.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS: Wear positive-pressure self-contained breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, pants, boots and gloves). If protective equipment is not available or not used, fight fire from a protected location or safe distance.

5. ACCIDENTAL RELEASE MEASURES (See Section 14 for Regulatory Information)

REPORTABLE QUANTITY: Not applicable (Per 40 CFR 302.4)

Spill Mitigation Procedures

Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area.

AIR RELEASE: Vapors may be suppressed by the use of water fog. Contain all liquid for treatment and/or disposal as a (potential) hazardous waste.

WATER RELEASE: This material is lighter than and soluble in water. Notify all downstream users of possible contamination. Divert water flow around spill if possible and safe to do so.

LAND SPILL: Create a dike or trench to contain materials. Spill materials may be absorbed using sand, clay or other absorbent material. Do not place spill materials back in their original containers. Containerize and label all spill materials properly.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING

SITUATIONS: In case of a fire, use normal fire fighting equipment including a NIOSH approved self-contained breathing apparatus (SCBA).

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to: boots, impervious gloves, splash-proof goggles and impervious clothing, i.e., chemically impermeable suit.

MATERIAL SAFETY DATA SHEET**GE-1143****6. HANDLING AND STORAGE:**

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER. AVOID BREATHING MIST OR VAPOR.

STORAGE CONDITIONS: Store in a cool, dry, well ventilated place.

Product Stability And Compatibility

SHELF LIFE LIMITATIONS: 5 years in drum or bulk

INCOMPATIBLE MATERIALS FOR PACKAGING: Fiber glass resins

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Strong oxidizers

7. EXPOSURE CONTROLS / PERSONAL PROTECTION:

ENGINEERING CONTROLS: Good general ventilation should be sufficient for most conditions. Local exhaust ventilation may be necessary for some operations.

Personal Protective Equipment

EYE/FACE PROTECTION: Use chemical goggles.

SKIN PROTECTION: When prolonged or frequently repeated contact could occur, use protective clothing impervious to this material. Selection of specific items such as faceshield, gloves, boots, apron or full-body suit will depend on operation.

RESPIRATORY PROTECTION: For most conditions, no respiratory protection should be needed; however, in misty atmospheres, use an approved mist respirator. If respiratory irritation is experienced, use an approved air-purifying respirator.

EXPOSURE GUIDELINE(S): None established.

8. PHYSICAL AND CHEMICAL PROPERTIES:

APPEARANCE: Yellow to dark brown liquid

ODOR: Mild ether

FREEZING POINT: No data

BOILING POINT: 473°F, 245°C

DECOMPOSITION TEMPERATURE: No data

SPECIFIC GRAVITY: 0.975 @ 25/25

VAPOR PRESSURE @ 25°C: <0.02 mm Hg

SOLUBILITY IN WATER: Complete

EVAPORATION RATE: <0.01 (Butyl acetate=1)

VAPOR DENSITY: Low

MATERIAL SAFETY DATA SHEET

GE-1143

9. STABILITY AND REACTIVITY:

Conditions Under Which This Product May Be Unstable

TEMPERATURES ABOVE: 100 Deg. C (212 Deg. F)

MECHANICAL SHOCK OR IMPACT: No

ELECTRICAL (STATIC) DISCHARGE: Avoid sparks

OTHER: Avoid heat and open flames

HAZARDOUS POLYMERIZATION: Will not occur

INCOMPATIBLE MATERIALS: Strong oxidizers

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide, acrid smoke and fumes

10. TOXICOLOGICAL INFORMATION: (See Section 2 for Potential Health Effects.)

SKIN: The dermal LD50 has not been determined.

INGESTION: The oral LD50 for rats is between 1260-2520 mg/kg.

MUTAGENICITY: For the components tested, in vitro mutagenicity studies were negative.

11. ECOLOGICAL INFORMATION:

Environmental Fate

MOVEMENT & PARTITIONING: Log octanol/water partition coefficient (log Pow) is estimated to be low. Based largely or completely on information for similar material.

DEGRADATION & PERSISTENCE: 20-day biochemical oxygen demand (BOD20) is 0.18 p/p. Biodegradation under aerobic static laboratory conditions is low (BOD20 or BOD28/ThOD between 2.5 and 10%)

ECOTOXICITY: Acute LC50 for fathead minnow (*Pimephales promelas*) is > 100 mg/L. Material is practically non-toxic to fish on an acute basis (LC50 greater than 100mg/L).

12. DISPOSAL CONSIDERATIONS:

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D. As a nonhazardous liquid waste, it should be disposed of in accordance with local, state, and federal regulations by incineration.

Care must be taken to prevent environmental contamination from the use of this material. The user of this material has the responsibility to dispose of unused material, residues and containers in compliance with all relevant local, state and federal laws and regulations regarding treatment, storage and disposal for hazardous and nonhazardous wastes.

MATERIAL SAFETY DATA SHEET**GE-1143****13. TRANSPORT INFORMATION:**

This Material Is Not Regulated As A DOT Hazardous Material.

14. REGULATORY INFORMATION: (Not meant to be all-inclusive -- selected regulations represented)

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See other sections for health and safety information.

U.S. REGULATIONS

SARA 313 INFORMATION: To the best of our knowledge, this product contains no chemical subject to SARA Title III Section 313 supplier notification requirements.

SARA HAZARD CATEGORY: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following categories:

- An immediate health hazard
- A delayed health hazard

TOXIC SUBSTANCES CONTROL ACT (TSCA): All ingredients are on the TSCA inventory or are not required to be listed on the TSCA inventory.

STATE RIGHT-TO-KNOW: This product is not known to contain any substances subject to the disclosure requirements of

- New Jersey
- Pennsylvania

OSHA HAZARD COMMUNICATION STANDARD: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

MATERIAL SAFETY DATA SHEET**GE-1143****14. REGULATORY INFORMATION: (Not meant to be all-inclusive -- selected regulations represented) (cont.)****CANADIAN REGULATIONS**

WHMIS INFORMATION: The Canadian Workplace Hazardous Materials Information System (WHMIS) Classification for this product is:

D2B - eye or skin irritant

Refer elsewhere in the MSDS for specific warnings and safe handling information. Refer to the employer's workplace education program.

CPR STATEMENT: This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

HAZARDOUS PRODUCTS ACT INFORMATION: This product contains the following ingredients which are Controlled Products and/or on the Ingredient Disclosure List (Canadian HPA section 13 and 14):

<u>Component</u>	<u>CAS Number</u>	<u>Amount (%w/w)</u>
Polypropylene glycol methyl ether	037286-64-9	98%

DISCLAIMER OF LIABILITY

The information on the MSDS was obtained from sources which we believe are reliable. HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS CORRECTNESS. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and beyond our knowledge. FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE, OR EXPENSE ARISING OUT OF OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT. This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.



P.O. BOX 837

MISSOURI CITY, TX 77459-0837

The Source for Exceptional ProductsSM

August 2009

Dear Customer,

From time to time we receive vital public health advisories which we would like to share with you on a priority basis. Please provide us with an email address where these may be sent. Please fill out the form below. **Your privacy will be protected.**

NOTE: Please FAX your completed form back to us at **FAX: (281) 835-8900 / (800) 835-8900**

We appreciate your friendship and the business you do with us!

Sincerely,

Name: _____

Dept/Title: _____

Co/Institution: _____

Phone: _____

eMail Address: _____

Your Selections:

- ☐ Public health advisories
- ☐ Special offers (close-outs, new products etc)
- ☐ eNews (Labor saving tips, industry news)
- ☐ Info about Paperless transactions

Environmental Services

Tank Cleaning Division
 11111 Riggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22373

Job #	Customer: <u>Mission</u>	Date: <u>11/13/09</u>
Tractor <u>2534</u>	Address:	Time: <u>10:03</u>
Trailer / Container Number <u>798</u>	Dropped By: <u>ERK</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20.0</u> #2 <u>20.0</u> #3 <u>20.0</u> #4 <u>20.0</u> #5 <u>20.0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<input checked="" type="checkbox"/>	
9 Caustic Wash & Dry	<input checked="" type="checkbox"/>	
10 Caustic Wash, Rinse & Dry	<input checked="" type="checkbox"/>	
11 Waste Water Surcharge	<input checked="" type="checkbox"/>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JR Date: 11-13-09
 Inspected By: _____ Date: _____

Print Name: _____ Date: _____

STROLEUM CARRIERS, INC.

OSLEY
 STON, TX 77075
 ADMINISTRATIVE
 PHONE HOUSTON A/C (713) 943-8250

TRIP TIME OUT OF TERMINAL

Date Time

TRIP TIME RETURN TO TERMINAL

Date Time

MILEAGE REPORT

End 222615

Begin 222115

Total 500

Shipper VALERO LP
 Address 301 LEROY ST
 Address HWY 281 @ HWY 72
 Origin Plant or Location THREE RIVERS TX 7807

Charge To

NYNAS USA

Driver (1) No. 0665

Driver (1) GARCIA, ARTURO

Driver (2) No.

Driver (2)

P/L Driver

Cust. No.

AS477

Shipper B/L 200900177

Cust. Order No. 36 34443/ DT 9600

JN 041

Consigned To

Address

VOPAK USA INC

BATTLEGROUND RD

V1799

Address

Destination

DEEP PARK TX

COMP. NO.	PRODUCT DESCRIPTION	TANK INCHES BEFORE AFTER	GROSS/ORDERED	TEMP	NET/DELIVERED	RATE	CHARGES
	REFER TO SHIPPER'S BILL OF LADING FOR D.O.T. DESCRIPTION T9 "60 PALE"		1500	GAL	6435		
A11							

THIS WILL CERTIFY THAT CARRIER TRUCK
 PUMP WAS USED TO DISCHARGE THIS LOAD.

Consignee
 Signature X

@

Extra Hose Furnished Ft. @

Loading Demurrage Hrs. @

Charge
 To No.

Unloading Demurrage Hrs. @

Charge
 To No.

Stop in Transit
 Town or Location

Diversion
 Town or Location

Tank Cleaning

Other Charges Purchase Order No: 36 34443/ DT 9600

BILLING EXPLANATION

Received in
 Good Order X

Date

Driver X

TOTAL
 CHARGES

Loading Location

DEMURRAGE EXPLANATION

Unloading Locat

Shipper X Driver X

CHG: ☐ YES ☐ NO
 PD: ☐ YES ☐ NO

TERMINAL
 MANAGER X

Consignee X Driver X

CHG: ☐ YES ☐ NO
 PD: ☐ YES ☐ NO

TERMINAL
 MANAGER X

TARIFF MILES TARIFF ITEM NO. TRACTOR NO. TRAILER NO. PRELOAD TRACTOR

223 244 766

Tanks pointed
 out by X

Carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of the commodity as described by the shipper. Received subject to tariffs and/or contracts in effect on the date of issuance hereof.
 MPC25 (Rev. 4/02)

CUSTOMER COPY

EPAHO011000832

Environmental Services
 Cleaning Division
 • Houston, TX 77021
 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22372

Factor 2534	Customer: Mission	Date: 1/13/09
Trailer / Container Number 765	Address:	Time: 8:18
	Dropped By: [Signature]	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0.6</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

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Cleaned By: JR Date: 1-13-09
 Inspected By: _____ Date: _____

Print Name: _____ Date: _____

LEUM CARRIERS, INC.

TX 77075

ADMINISTRATIVE

PHONE HOUSTON A/C (713) 943-8250

TRIP TIME OUT OF TERMINAL

Date Time

TRIP TIME RETURN TO TERMINAL

Date Time

MILEAGE REPORT

End 232325

Begin 231827

Total 498

Shipper VALERO LP
Address 301 LEROY ST
Address HWY 281 @ HWY 72
Origin Plant or Location THREE RIVERS TX 74077

Charge To NYNAS USA
Driver (1) No. C621 Driver (1) CASTILLO, DOMINGO
Driver (2) No. P/L Driver
Shipper B/L 200900231
Cust. Order No. 77 OT 9415

Consigned To VOPAK USA INC
Address BATTLEGROUND RD
Address
Destination DEER PARK TX

COMP. NO.	PRODUCT DESCRIPTION	TANK INCHES BEFORE AFTER	GROSS/ORDERED	TEMP	NET/DELIVERED	RATE	CHARGES
	REFER TO SHIPPER'S BILL OF LADING FOR D.O.T. DESCRIPTION T9 "A0 PALE"			6300 GAL	6480.00		

THIS WILL CERTIFY THAT CARRIER TRUCK
PUMP WAS USED TO DISCHARGE THIS LOAD.

Consignee
Signature X

@

Extra Hose Furnished	Ft. @	
Loading Demurrage	Hrs. @	Charge To No.
Unloading Demurrage	Hrs. @	Charge To No.
Stop in Transit Town or Location		
Diversion Town or Location		
Tank Clearing		
Other Charges	Purchase Order No. S6 344977 OT 9415	

LLING EXPLANATION

ceived in od Order X Date 1-8-0 Driver X TOTAL CHARGES Unloading Location

DEMURRAGE EXPLANATION

per X Driver X
3: YES NO TERMINAL
2: YES NO MANAGER X
Consignee X Driver X
CHG: YES NO
PD: YES NO TERMINAL
MANAGER X

IFF MILES TARIFF ITEM NO. TRACTOR NO. TRAILER NO. PRELOAD TRACTOR
23 2352 765
icks pointed by X

ar certifies that the cargo tank supplied for this shipment is a proper container for the transportation of the commodity as described by the shipper. Received subject to tariffs and/or contracts in effect on the date of issuance hereof.

CES Environmental Services, Inc.

4904 Griggs Road
Houston, TX 77021
Phone: (713) 676-1460
Fax: (713) 676-1676

Invoice

Date	Invoice #
3/25/2009	55099

Bill To
Mission Petroleum Carriers, Inc. Attn: Accts Payable 8450 Mosley Houston, TX 77075

		P.O. No.	Terms	Project	
			Net 30		
Quantity	Description	Ticket #	Rate	Amount	
	Cleaning of Tank Trailer #795 on 03/17/09				
1	Solvent Wash (Diesel) & Detergent Wash, Rinse & Dry	17192	275.00	275.00	
	5% Energy Surcharge		13.75	13.75	
	1% Compliance Fee		2.8875	2.89	
Thank you! We appreciate your business.			Subtotal	\$291.64	
Late Payment Policy: Any unpaid balances after 30 days will accrue a monthly interest rate of 1.5%.			Sales Tax (8.25%)	\$0.00	
This trailer/equipment has been inspected by customer and thus is clean and ready for re-use. CES shall not be liable for consequential and/or incidental damages.			Total	\$291.64	

CES Environmental Services

Container / Tank Cleaning Division

4904 Griggs Rd. • Houston, TX 77021

Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER**26196**

PO #	Customer: <u>Mission Petroleum</u>	Date: <u>6-17-09</u>
Tractor <u>2616</u>	Address:	Time: <u>12:15pm</u>
Trailer / Container Number <u>6050</u>	Dropped By: <u>David Lewis</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Crude oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature <u>ST</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<u>Wash out only</u>
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: AR ST Date 6-18-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

EPAHO011000836

MISSION PETROLEUM CARRIERS, INC.
TANK TRUCK RUN TICKET

PRESS HARD
USE A BALL POINT PEN

CHARGE TO <i>TEPPO</i>				CUSTOMER NO.				WAYBILL			
OPERATOR <i>BARROW - Shaver</i>											
LEASE NAME <i>EVA MAE Miller #2</i>						COUNTY <i>Leon</i>			STATE <i>TX</i>		
LEASE NO. <i>452639</i>			DISTRICT NO. <i>205</i>			DRIVER NO. <i>K380</i>		DRIVER <i>JAMES W Kovach</i>			
MILEAGE REPORT:				END: <i>371327</i>		BEGIN: <i>371217</i>		TOTAL: <i>110</i>			
MONTH <i>6</i>	DAY <i>3</i>	YEAR <i>09</i>	TANK NO. <i>01</i>			TANK SIZE <i>400</i>			TICKET NO. <i>6106879</i>		
GAUGE	OIL LEVEL			TEMP	SALT & WATER		GROSS BARRELS				
	FEET	INCHES	1/4 INCH		FEET	INCHES					
	1 ST	<i>13</i>	<i>10</i>		<i>0</i>	<i>86</i>					
2 ND	<i>3</i>	<i>8</i>	<i>2</i>	<i>86</i>	<i>0</i>	<i>6</i>					
OBSERVED GRAVITY & TEMPERATURE <i>71.4</i> <i>86</i>				SEDIMENT & WATER <i>11/10%</i>				OIL TRUCKED BY <i>MISSION</i>			
OIL TRUCKED TO <i>North Zulch TX</i>						TRUCK NO. <i>262H</i>			TRAILER NO. <i>6050</i>		
TURNED ON	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>x James W Kovach</i>						DATE <i>6-3-09</i>		TIME <i>1000</i>		
	SIGNATURE OF WITNESS (OR WAIVER NO.) <i>x</i>						OFFSEAL <i>N/A</i>				
SHUT OFF	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>x James W Kovach</i>						DATE <i>6-3-09</i>		TIME <i>1030</i>		
	SIGNATURE OF WITNESS (OR WAIVER NO.) <i>x</i>						ONSEAL <i>N/A</i>				
NO. UNITS/TYPE		HM	PROPER SHIPPING NAME, HAZARD CLASS UN/NA NUMBER						QUANTITY		
<i>1 TANK</i>		<i>✓</i>	<i>PETROLEUM CRUDE OIL, 3, UN 1267 II (CRUDE OIL)</i>						ESTIMATE GROSS	<i>203.72</i>	
									ACTUAL NET		

IN THE EVENT OF AN EMERGENCY INVOLVING THIS SHIPMENT THAT ENDANGERS LIFE OR PROPERTY

CALL: CHEMTREC 800-424-9300

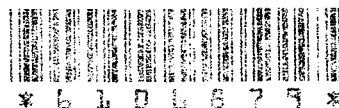
REMARKS

LM-61

THIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

MISSION PETROLEUM CARRIERS, INC., SHIPPER

OIL COVERED BY THIS RUN TICKET IS CONSIDERED TO BE RECEIVED BY MISSION PETROLEUM CARRIERS, INC. ON THE FIRST DATE SHOWN ABOVE.



CES Environmental Services

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26084

PO #	Customer: <u>M.P.C.</u>	Date: <u>6/10/09</u>
Tractor <u>26116</u>	Address:	Time: <u>11:40 AM</u>
Trailer / Container Number <u>6308</u>	Dropped By: <u>David Lewis</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Crude oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
5 Steam Only (Per Hour)		Signature: <u>B-H</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: B-H Date 6-11-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

EPAHO011000838



P.O. Box 5090
Sugar Land, TX 77487-5090

Crude or Product Run Ticket

☐ Oklahoma (MCPL) ☐ West TX (SPLSC)
☐ Texas (SPL) ☐ Nederland
☐ Trucking

PETROLEUM CRUDE OIL,
3 (FLAMMABLE), UN 1267, PG II

BBLs

Origin (Operator or Field Location) <i>Amador</i>		Delivery Receipt <input type="checkbox"/> <input type="checkbox"/>
From/To (Lease or Company Name) <i>Amador</i>		RVP
Shipper - Sunoco Logistics L.P.		Proving No
Credit		Liquid Un No <i>1267</i>
Federal/Indian ID Number	County	State <i>TX</i>
Description (Federal/Indian Lease Only)		

Tractor Number <i>2837</i>		Trailer Number <i>6308</i>		Destination (Company Name) <i>Heavne</i>			
Tank Size <i>20x400</i>		Moved by Pump <input type="checkbox"/> Gravity <input type="checkbox"/> Truck <input type="checkbox"/> Other <input type="checkbox"/>		Destination (Field Location)			
Month <i>6</i>	Day <i>2</i>	Year <i>09</i>	Time On <i>08:00 A</i>	Beat Number Sub	Ticket Number <i>1 43778</i>		
Tank or Meter Number <i>1331101</i>		Office Code		Grade Code	Lease Code/Entry Number <i>13311</i>		
Gauge	Obs Gty	Temp °F	Corr Gty	S & W in Suspension		S & W in Bottoms	
1st	<i>487</i>	<i>80</i>		<i>0.05</i>		<i>0</i>	<i>08</i>
2nd						<i>08</i>	
Oil Level				Odometer Start/End Total			
Gauge	Ft	In	Fract	Temp °F			
1st	<i>12</i>	<i>4</i>	<i>83</i>	<i>12</i>			
2nd	<i>24</i>	<i>83</i>		Driver No. <i>2478</i>			

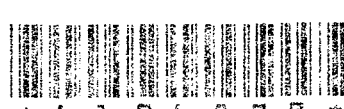
Transaction Number		Metered <input type="checkbox"/> Barrels <input type="checkbox"/> Gallons	
Off			
On			
Temp Comp	Meter Factor	Avg Line Temp	Ind or Est Volume
<input type="checkbox"/> Yes <input type="checkbox"/> No		°F	<i>20040</i>
Temp Factor	Avg Press psig	Compress Factor	Net Volume
Gauger	Seal Off		
On	Operator's Witness or Waiver No		Seal On
Off	Operator's Witness or Waiver No		Time <i>12:30 M</i>
			Month <i>6</i>

MISS 1027 Subject to Carrier's Tariffs in Effect on Date of C

EMERGENCY RESPONSE
CHEMTREC 1-800-424-9300
OIL MOVEMENT

MISSION PETROLEUM CARRIERS, INC.
TANK TRUCK RUN TICKET

PRESS HARD
USE A BALL POINT PEN

CHARGE TO <i>TEPICO</i>				CUSTOMER NO.				WAYBILL			
OPERATOR <i>BARROW - Shaver</i>											
LEASE NAME <i>EVA MAE Miller #2</i>						COUNTY <i>Leon</i>			STATE <i>TX</i>		
LEASE NO. <i>452639</i>			DISTRICT NO. <i>205</i>			DRIVER NO. <i>K380</i>		DRIVER <i>James W Kodach</i>			
MILEAGE REPORT:				END: <i>371327</i>			BEGIN: <i>371217</i>			TOTAL: <i>110</i>	
MONTH <i>6</i>		DAY <i>3</i>		YEAR <i>09</i>		TANK NO. <i>01</i>		TANK SIZE <i>400</i>		TICKET NO. <i>6106879</i>	
GAUGE	OIL LEVEL			TEMP	SALT & WATER		GROSS BARRELS				
	FEET	INCHES	1/4 INCH		FEET	INCHES					
1 ST	<i>13</i>	<i>10</i>	<i>0</i>	<i>86</i>	<i>0</i>	<i>6</i>					
2 ND	<i>3</i>	<i>8</i>	<i>2</i>	<i>86</i>	<i>0</i>	<i>6</i>					
OBSERVED GRAVITY & TEMPERATURE <i>71.4</i> <i>86</i>			SEDIMENT & WATER <i>11/10%</i>			OIL TRUCKED BY <i>Mission</i>					
OIL TRUCKED TO <i>North Zulch TX</i>						TRUCK NO. <i>262H</i>		TRAILER NO. <i>6050</i>			
TURNED ON	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>x James W Kodach</i>					DATE <i>6-3-09</i>		TIME <i>1000</i>			
	SIGNATURE OF WITNESS (OR WAIVER NO.) <i>x</i>					OFFSEAL <i>N/A</i>					
SHUT OFF	FOR MISSION PETROLEUM CARRIERS, INC. (SIGNATURE) <i>x James W Kodach</i>					DATE <i>6-3-09</i>		TIME <i>1030</i>			
	SIGNATURE OF WITNESS (OR WAIVER NO.) <i>x</i>					ONSEAL <i>N/A</i>					
NO. UNITS/TYPE <i>1 TANK</i>		HM <i>✓</i>		PROPER SHIPPING NAME, HAZARD CLASS UN/NA NUMBER <i>PETROLEUM CRUDE OIL, 3, UN 1267 II (CRUDE OIL)</i>					QUANTITY		
									ESTIMATE GROSS <i>203.72</i>		
									ACTUAL NET		
<p>IN THE EVENT OF AN EMERGENCY INVOLVING THIS SHIPMENT THAT ENDANGERS LIFE OR PROPERTY</p> <p>CALL: CHEMTREC 800-424-9300</p>											
REMARKS <i>LM-61</i>											
<p>THIS IS TO CERTIFY THAT THE HEREIN NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.</p> <p>MISSION PETROLEUM CARRIERS, INC., SHIPPER</p> <p>OIL COVERED BY THIS RUN TICKET IS CONSIDERED TO BE RECEIVED BY MISSION PETROLEUM CARRIERS, INC. ON THE FIRST DATE SHOWN ABOVE.</p>											
 <p>* 6 1 0 6 8 7 9 *</p>											

**Crude or Product Run Ticket**

☐ Oklahoma (MCPL)
☐ Texas (SPL)
☐ Trucking

☐ West TX (SPLSC)
☐ Nederland

P.O. Box 5090
Sugar Land, TX 77487-5090

PETROLEUM CRUDE OIL,
3 (FLAMMABLE), UN 1267, PG II

BBLs

Origin (Operator or Field Location)

Delivery Receipt

From/To (Lease or Company Name)

RVP

Shipper - Sunoco Logistics L.P.

Proving No

Credit

Liquid Un No

Federal/Indian ID Number

County

State

Description (Federal/Indian Lease Only)

Tractor Number

Trailer Number

Destination (Company Name)

Tank Size

Moved by
☐ Pump
☐ Gravity
☐ Truck
☐ Other

Destination (Field Location)

Month Day Year

Time On

Beat Number Sub

Ticket Number

Tank or Meter Number

Office Code

Grade Code

Lease Code/Entry Number

Gauge

Obs Gty

Temp °F

Corr Gty

S & W in Suspension

S & W in Bottoms

1st

487.80

0.05

0.08

0.08

0.08

2nd

Gauge

Oil Level

Ft

In

Fract

Temp °F

1st

12

4

83

12

2nd

24

83

2478

Transaction Number

Metered

☐ Barrels

☐ Gallons

Off

On

Temp Comp

Meter Factor

Avg Line Temp

Ind or Est Volume

☐ Yes ☐ No

°F

20040

Temp Factor

Avg Press

psig

Compress Factor

Net Volume

Gauger

Seal Off

On

Operator's Witness or Waiver No

Seal On

Oil Trucked

By:

Time

Month Day

Off

Operator's Witness or Waiver No

Time

Month Day

MISS 1027 Subject to Carrier's Tariffs in Effect on Date of Origin Non-negotiable

EMERGENCY RESPONSE
CHEMTREC 1-800-424-9300

EPAHQ011000841

Environmental Services

Cleaning Division

10000 Rd. • Houston, TX 77021

(713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25869

PO #	Customer: Mission	Date: 6/1/09
Tractor 2851	Address:	Time: 11:33am
Trailer / Container Number 797	Dropped By: Dominguez Castillo	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Base Oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 20.9 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature:
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: S.T. Date: 6-1-09

Inspected By: Date:

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Dominguez Castillo Date: 6-1-09

Signature: [Signature]

EPAHQ011000842

Bill of Lading / Delivery Manifest & Receipt

If this document evidences a delivery into shipper's consignee's truck, it is not a bill of lading, but a manifest and receipt for the delivery. The shipper certifies that the herein named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

Carrier certifies that the container supplied by the carrier for this shipment is a proper container for transportation of the products described below and it will not cause any of the prohibited activities published in 40 CFR and 80.78. The Carrier did not observe any unusual or unsatisfactory loading conditions.

CARRIER BY: MISSION TRANSPORT P.O. #:

HAZARDOUS MATERIAL EMERGENCY PHONE - CALL CHEMTREC 800-424-9300
EMERGENCY SPILL PROCEDURES, HAZARD INFORMATION, SHIPPERS CERT & EPA MESSAGES ARE PRINTED ON REVERSE SIDE.

Manifest: 200905046	Carrier: MISSION TRANSPORT	
Date: 05/30/09	Carrier No: 33	Loaded At:
Time in: 17:40:00	Truck No: 2851	THREE RIVERS, TX (B)-DS INV.
Time out: 18:29:00	Trailer: 797	P.O. BOX 490
Trans: TRUCK/TRAILER	Contract: S637375	THREE RIVERS, TX 78071
		EPA#4006

<u>Sold To:</u>	<u>Ship To:</u>	<u>Project:</u>
Vopak Terminal Deer Park, TX	Vopak Terminal Deer Park, TX	
c/o Mynas USA, Inc	c/o Mynas USA, Inc	Vopak Terminal Deer Park,
2759 Battleground Road	2759 Battleground Road	
DEER PARK, TX 77536-0897	DEER PARK TX 77536-0897	Deer Park* TX

Comments: 1 comp

Seller: Mynas USA Inc	Acct.: 244318
Freight: PREPAID	Seals: 62672/62673

PRODUCT AND CLASSIFICATION	UOM	Temp.	Gross	Net
300 BASE OIL	Gal			6,005.00
	MT	13.92	25.34	21.43
	LBS	30.600	70,920.00	47,240.00
Tank/Batch: 208/90524	Temp: 180.00	Grav: 0.9446	TONS: 38.96	33.62

Loaded By: jrod proc_oils

Environmental Services

/ Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676


TANK WASH WORK ORDER

22613

PO #	Customer: <u>MILSTED ENVIRONMENTAL</u>	Date: <u>1/30/09</u>
Tractor	Address: <u>2907 W. HAWTHORNE</u>	Time: <u>1800</u>
Trailer / Container Number <u>033</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☒ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Roll off
1	<u>DIESEL / WATER</u>		<u>50 gal</u>	<u>200</u>
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>2</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 _____ #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>[Signature]</u>
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: 
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		_____
19 Hydroblaster (# Hours)		_____
20 Solvent Wash (Green Stripper)		_____
21 Passivation		_____
Hose Cleaning		_____
Pump Cleaning		_____

Cleaned By: CP Date: 1-30-09
 Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

EPAHO011000844

Environmental Services

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22802

PO # <u>80692 JXJLO</u>	Customer: <u>Milshoad STAD Envir.</u>	Date: <u>2/02/09</u>
Tractor <u>B-10</u>	Address:	Time:
Trailer / Container Number	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☒ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>oily water</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20</u> #2 <u>20</u> #3 <u>20</u> #4 <u>20</u> #5 <u>20</u>
2 Quick Rinse		LEL (<10%) #1 <u>20</u> #2 <u>20</u> #3 <u>20</u> #4 <u>20</u> #5 <u>20</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>20</u> #2 <u>20</u> #3 <u>20</u> #4 <u>20</u> #5 <u>20</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>20</u> #2 <u>20</u> #3 <u>20</u> #4 <u>20</u> #5 <u>20</u>
5 Steam Only (Per Hour)		Signature: <u>AK</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: AK Date 2/02/09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

EPAHO011000845

**CES Environmental
Services, Inc.**

Bill Of Lading # :

80692

Folder ID :	Non DOT Regulated Material Water w/ Hydrocarbons
-------------	-----------------------------------------------------

Original - Shipper Provided Short Form Straight Bill of Lading - Not Negotiable - Domestic

SHIPPED FROM :	Waste Management
Milstead Environmental	11a) HOU-1123
29707 W. Hawthorne	11b)
Spring, TX 77386	11c)
(281) 367-3535	11c)

The property described below, in apparent good order, except as noted (content and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this as meaning any person or corporation authorized to be in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. This Bill of Lading is a receipt for goods. It is not of itself a contract of carriage. It is mutually agreed, as to each carrier of all or as to any said over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions contained in the applicable contract between shipper and carrier or intermediary.

For payment, charges to be billed to Shipper or the "Billed to" party are set forth in the governing contract with Shipper. No charges other than those contained therein may be billed to Shipper or the "Billed to" party without prior written consent of Shipper. The extra copy of this Bill of Lading, furnished at the time of shipment, must be attached to the freight bill submitted to Shipper or the "Billed to" party and sent to:

CONSIGNEE TO :	CARRIER :
CES Environmental Services, Inc.	AAA Flexible Pipe Cleaning
4904 Griggs Rd.	3900 Underwood Rd.
Houston, TX 77021	La Porte, TX 77571

This is to certify that the product stated below are properly classified, described, packaged, marked and labeled and is in proper condition for transportation according to the applicable regulations of the Department of Transportation. If this Shipment moves between to ports by a carrier by water, the law requires that the Bill of Lading shall state whether it is "carrier's or shipper's weight."

Intermodal Certificate: All information required by Federal Highway Administration regulations at 49 CFR 390.54-2 implementing the Intermodal Safe Container Act of 1992 is set forth on the face of this bill of lading. The shipper name herein is the tendering party.

Haz	Container		Total Quantity	Unit Wt/Vol	Description of Materials, Special Marks, and Exceptions
	No.	Type			
No	1	TT	300	G	Recyclable Hydrocarbon and Water Mixture

Shipper : Milstead Environmental

Per :

Signature

Date :

Carrier : AAA Flexible Pipe Cleaning

Per :

Signature :

Date :

Receiving Facility : CES Environmental Services, Inc.

Per :

Signature :

Date :

White (Generator Return Copy)

Yellow (Transporter Copy)

Pink (Receiving Facility Copy)

Golden Rod (Generator 1st Copy)

Environmental Services

TANK WASH WORK ORDER

22785

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
one: (713) 676-1460 • Fax: (713) 676-1676

PO # B.O.L. 80097	Customer: M: /sted "CES"	Date: 1/21/09
Tractor BH-10	Address:	Time:
Trailer / Container Number	Dropped By: Dennis [Signature]	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☒ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	oil water			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 21.0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: CP
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date 1-21-09

Inspected By: Date

Print Name: Date

Signature:

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000847

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Environmental Services

Tank Cleaning Division
 11000 S. Loop West • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22423

Customer: <u>Milstead</u>	Date: <u>12-16-08</u>
Tractor: <u>VH11</u>	Time: <u>9:58a</u>
Trailer / Container Number: <u>[Signature]</u>	Need By: <u>Waiting</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☒ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>w/w</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>2-10%</u> #2 <u>2</u> #3 <u>2</u> #4 <u>2</u> #5 <u>2</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>[Signature]</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<input checked="" type="checkbox"/>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<input checked="" type="checkbox"/>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: ST Date: 12-16-08

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

**CES Environmental
Services, Inc.**

Bill Of Lading # :

78093

Folder ID :

Non Dot Regulated Material
Water w/ Hydrocarbons

Original - Shipper Provided Short Form Straight Bill of Lading - Not Negotiable - Domestic

SHIPPED FROM :

Milstead Environmental
29707 W. Hawthorne
Spring , TX 77386
(281) 367-3535

11a) HOU-1123

11b)

11c)

11c)

The property described below, in apparent good order, except as noted (content and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this as meaning any person or corporation authorized to be in possession of the property under the contract) agrees to carry to its unusual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. This Bill of Lading is a receipt for goods; it is not of itself a contract of carriage. It is mutually agreed, as to each carrier of all or as to any said over all or any portion of said route to destination, and as to each party any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions contained in the applicable contract between shipper and carrier or intermediary.

For payment: Charges to be billed to Shipper or the "Billed to" party are set forth in the governing contract with Shipper. No charges other than those contained therein may be billed to Shipper or the "Billed to" party without prior written consent of Shipper. The extra copy of this Bill of Lading, furnished at the time of shipment, must be attached to the freight bill submitted to Shipper or the "Billed to" party and sent to:

CONSIGNEE TO :

CES Environmental Services, Inc.
4904 Griggs Rd.
Houston , TX 77021

CARRIER :

AAA Flexible Pipe Cleaning
3900 Underwood Rd.
La Porte , TX 77571

This is to certify that the product stated below are properly classified, described, packaged, marked and labeled and is in proper condition for transportation according to the applicable regulations of the Department of Transportation. If this Shipment moves between to ports by a carrier by water, the law requires that the Bill of Lading shall state whether it is "carrier's or shipper's weight."

Intermodal Certificate: All information required by Federal Highway Administration regulations at 49 CFR 390.54© implementing the Intermodal Safe Container Act of 1992 is set forth on the face of this bill of lading. The shipper name herein is the tendering party.

Haz	Container		Total Quantity	Unit Wt/Vol	Description of Materials, Special Marks, and Exceptions
	No.	Type			
No	1	TT	1000	G	Recyclable Hydrocarbon and Water Mixture

Shipper : Milstead Environmental

Per : _____ **Signature :** _____ **Date :** _____

Carrier AAA Flexible Pipe Cleaning

Per : _____ **Signature :** _____ **Date :** _____

Receiving Facility CES Environmental Services, Inc.

Per : _____ **Signature :** _____ **Date :** _____

White (Generator Return Copy)

Yellow (Transporter Copy)

Pink (Receiving Facility Copy)

Golden Rod (Generator 1st Copy)

EPAHQ011000850

Environmental Services

TANK WASH WORK ORDER

/ Tank Cleaning Division
 11000 S. 11th Rd. • Houston, TX 77021
 Tel: (713) 676-1460 • Fax: (713) 676-1676

24340

Job #	Customer: <u>LEE'S</u>	Date: <u>8/20/09</u>
Tractor <u>2630</u>	Address:	Time:
Trailer / Container Number <u>775</u>	Dropped By: <u>Paul Owens</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Fatty Acid</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
2 Quick Rinse		LEL (<10%) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
5 Steam Only (Per Hour)		Signature: <u>SE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: SE Date: 8/24/09
 Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record

Shipper's No. 69592-1	Page 1 OF 1
Agent's No.	

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR	Date 02/25/09
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 2092-01 HUNTSMAN PETROCHEMICAL CORP.	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPAID
SHIP TO ADDRESS: 3892 US HWY 90		Received \$ to apply in prepayment of the charges on the property described hereon Agent or Cashier
CITY, STATE, ZIP: DAYTON, TX 77535 USA		Per (The signature here acknowledges only the amount prepaid)
ROUTE:		Charges Advanced \$
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"
CAR INITIALS AND NUMBER:	SEAL NUMBER(S):	

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 300 TALL OIL FATTY ACIDS PTBP-0300 <i>2/26/09 J. Sanderson</i>	GROSS TARE NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC (Signature of Consignor)
DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEASED TO CONSIGNEE

SPECIAL INSTRUCTIONS	
PO# 6400032510 R#2 Deliver On 02/26/2009 11:30 AM LOAD 45,000 LBS. FAX COA TO: 936-258-2975 & SEND W/SHIPMENT. HUNTSMAN MAT'L CODE #700364. <i># 87578</i>	
THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.	

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG, OR BAG
Georgia-Pacific Chemicals LLC Per 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200	

APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier:	Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

4 IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000852

TANK WASH WORK ORDER

Englewood, Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

24533

PO # 53226	Customer: I.T.C.	Date: 06:23-09
Tractor 45105	Address:	Time:
Trailer / Container Number 1266	Dropped By:	Need By: ASAP.

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	DBE-3			
2	DBE			
3	DBE-3			
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 0 #3 0 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 0 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 0 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 0 #3 #4 #5
5 Steam Only (Per Hour)		Signature: CP
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date 6-23-09

Inspected By: _____ Date _____

Print Name: A. Vasquez Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000853

INVISTA
Material Safety Data Sheet-----
DBE-3
130000000123 Revised 1-MAY-2004
-----CHEMICAL PRODUCT/COMPANY IDENTIFICATION

Material Identification

Formula : CH₃OOC(CH₂)_nCOOCH₃, n=2,3 and 4
Molecular Weight : Avg. 173

Tradenames and Synonyms

DIBASIC-ESTER-3
DIMETHYL ADIPATE
HEXANEDIOIC ACID, DIMETHYL ESTER

Company Identification

MANUFACTURER/DISTRIBUTOR

INVISTA S.à r.l.
INVISTA Building
4123 East 37th Street North
Wichita, KS 67220

PHONE NUMBERS

Product Information : 1-877-446-8478 (outside the U.S. 770-792-4221)
Transport Emergency : CHEMTREC 1-800-424-9300 (outside U.S. 703-527-3887)
Medical Emergency : 1-613-348-3616-----
COMPOSITION/INFORMATION ON INGREDIENTS

Components

Material	CAS Number	%
DIMETHYL ADIPATE	627-93-0	85-95
DIMETHYL GLUTARATE	1119-40-0	5-15

HAZARDS IDENTIFICATION

Potential Health Effects

DBE-3 may irritate skin, eyes, nose and throat. May cause
blurry vision.

HUMAN HEALTH EFFECTS:

Skin contact may cause skin irritation with discomfort or
rash. Eye contact may cause eye irritation with

Print Date: 8 - 12 - 2004

35354	Customer: ITS	Date: 6-23-09
Tractor 772042	Address: Channelview TX	Time: 18:15
Trailer / Container Number 2041	Dropped By: C. Roy	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	TRIETHANOLAMINE			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 22.9 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature:
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry	✓	Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: J.E. Date: 6-23-09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: C. Roy Date: _____

Signature: [Signature]

TANK WASH WORK ORDER

24662

TX 77021

• Fax: (713) 676-1676

Customer:	I.T.S.	Date:	06.26.09
Address:		Time:	
Trailer / Container Number	Dropped By:	Need By:	ASAP.

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	DCI-30			
2	DFS-135			
3	PPD-2151			
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: B-H
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: B-H Date 6.2

Inspected By: Date

Print Name: A. Vasquez Date

Signature:

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000856

Environmental Services

TANK WASH WORK ORDER

Cleaning Division

Rd. • Houston, TX 77021

Phone: (713) 676-1460 • Fax: (713) 676-1676

24605

PO # <u>53108</u>	Customer: <u>ITS</u>	Date: <u>6/26/09</u>
Tractor <u>171</u>	Address:	Time: <u>8:30 AM.</u>
Trailer / Container Number <u>LT-942</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☒ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Isoprene Acid</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>GP</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		
8 Detergent Wash, Rinse & Dry		Comments:
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: GP Date 6-26-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000857

Environmental Services

TANK WASH WORK ORDER

Tank Cleaning Division
 11000 S. Loop West, Suite 100 • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

24609

PO # 53450	Customer: ITS	Date: 6-28-09
Tractor 1381	Address:	Time:
Trailer / Container Number 942	Dropped By: Sergio Dominguez	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	060A-304			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 20.1 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JE
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date 6-28-09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date 6-28-09

Signature: _____

South Coast Terminals

9317 EAST AVENUE S

HOUSTON, TX 77012

SHIP DATE

ORDER DATE

06/26/09

B/L NO.

24959

PAGE 1 OF 1

CARRIER

ITS Tr. 1381

CONSIGNEE


CHEVRON ORONITE CO.
10285 HWY 23 SOUTH
BELLE CHASSE LA 70037

SHIPPER

CHEVRON ORONITE COMPANY LLC
ATTN: PROCUREMENT SPECIALIST, LOGIS
4800 FOURNACE PLACE
BELLAIRE TX 77401

CUST NO. 02502	SALES AG. JJ	CONSIGNEE NO. 4500007473-20	BOOKING #
-------------------	-----------------	--------------------------------	-----------

CUST. ORDER NO.	FREIGHT PREPAID	CAR# TRAILER# TS 942	SEAL 63115 & 63116
-----------------	--------------------	-------------------------	-----------------------

QUANTITY ORDERED	QUANTITY SHIPPED	PACKAGING	H M	DESCRIPTION	IN LBS NET WEIGHT	IN LBS GROSS WEIGHT
45000 44,100 #	0	1		NOT DOT REGULATED AL-304 TEMP 80°F 	G T N 45000 44,100 #	77200 # 33100 # 45000 44,100 #

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

MARCOSG

Signature

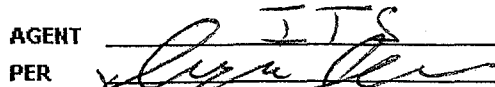
Subject to Section 7 of the conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

MARCOSG

Signature of Consigner

The correct weight is as shown above subject to verification in accordance with any applicable agreement with carriers or their authorized agent.

Received, subject to the classifications and lawfully filed tariffs in effect on the date of the issue of this Bill of Lading, the property described below in apparent good order, subject to all the terms and conditions of the Domestic Bill of Lading set forth in the classification or tariff which governs the transportation of the shipment.

SHIPPER		CARRIER		COD Amt: \$
SHIPPER	South Coast Terminals	PLACARDS OFFERED DRIVER PLEASE INITIAL N/c	PLACARDED <input type="checkbox"/> NAME OF PLACARD D	Third Party Freight Bill To: CHEVRON CHEMICAL P.O. BOX 70 BELL CHASE, LA 70037
PER	MARCOSG	MSDS and COA RECEIVED <input checked="" type="checkbox"/> X 90		
FOR EMERGENCY RESPONSE INSTRUCTIONS CALL CHEMTREC at 1-800-424-9300		AGENT PER  TOTAL NO. OF PACKAGES REC'D.		

EPAHO011000859

CES Environmental Services

Container Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

2466

PO # S3449	Customer: ITS	Date: 6-27-09
Tractor 173	Address:	Time:
Trailer / Container Number 2042	Dropped By: William	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TR

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	AL-304			
2	Not Dot Regulated			
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 20.1 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: B-H
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: **B-H** Date: **6-28-09**

Inspected By: _____ Date: _____ Print Name: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to thoroughness of the tank washing procedure or the total elimination of interior residues and moisture. Final inspection of the equipment remains the responsibility of the customer, and the release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

PO # 53451	Customer: ITS	Date: 6/28/09
Tractor 143	Address:	Time: 1200
Trailer / Container Number 693	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 N/A				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 201 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JE
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: **JE** Date: **6289**

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: **Victor Brown** Date: **6/28/09**

Signature: **V. Brown**

TANK WASH WORK ORDER

1460 • Fax: (713) 676-1676

24646

370	Customer: ITS	Date: 6-25-09
7	Address:	Time: 19:35
Container Number 707	Dropped By:	Need By: ASAP

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
 TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Department #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
no check GP-77				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 #3 #4 #5
Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
Steam Only (Per Hour)		Signature: JL
Steam & Dry		Stripper Usage:
Rinse, Steam & Dry		Comments:
Detergent Wash, Rinse & Dry		
Caustic Wash & Dry		
Caustic Wash, Rinse & Dry		
Waste Water Surcharge		
Solvent Wash (Diesel # Hours)		
Solvent Wash (Stripper)		
Exterior Tractor Wash		
Exterior Trailer Wash (w/o Internal)		
Exterior Trailer Wash (with Internal)		
Exterior Acid Brite Wash		Authorized Additional Services:
Hand Labor (# Men / # Hours)		
Hydroblaster (# Hours)		
Solvent Wash (Green Stripper)		
Passivation		
Use Cleaning		
ump Cleaning		

Cleaned By: JL Date 6-25-9

Inspected By: Date

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Tommy Franks Date 6-25-09

Signature: Tommy W. Franks

26180

Customer: LEE'S	Date: 6/15/09
Address:	Time: 18:00
Tractor 2920	
Trailer / Container Number 955	Dropped By:
	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 fatty Acid				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: SL
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	NEED BY 6/16/09 7:00 AM
9 Caustic Wash & Dry	/	
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		Authorized Additional Services:
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: **SL** Date: **6-15-09**

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

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ORDER must be legibly filled in, in ink, in indelible Pencil, or in ink, as required by the Agent.

Shipper's No. 70690-1	Page 1 OF 1
Agent's No.	
Date 06/14/09	

subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR

Property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property, or all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 2067-01 LAMBERTI USA, INC.	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPAID
SHIP TO ADDRESS: US 59 @ COUNTY RD 212		Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: HUNGERFORD, TX 77448 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges: Advanced \$
CAR INITIALS AND NUMBER: 2920 955	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 300 TALL OIL FATTY ACIDS PTBP-0300	GROSS 96080 TARE 31000 NET 45080 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.
DESCRIPTION FOR FREIGHT RATING PURPOSES:		Georgia-Pacific Chemicals LLC (Signature of Consignor)
RAIL CAR TRIP LEASED TO CONSIGNEE		

SPECIAL INSTRUCTIONS

PO# 4500272421
Deliver On 06/15/2009 3 pm
Load 45,000 lbs. COA to accompany shipment.
XTOL 300 - PRODUCT CODE "M099259-000000"

"M099701-000000"

Michael M. Dyll

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED

EMERGENCY RESPONSE INFORMATION ATTACHED

OSHA TAG(S)/LABEL(S) APPLIED
PRODUCT SPECIFIC LABEL, TAG, OR BAG

Georgia-Pacific Chemicals LLC

Per

133 Peachtree St. N.E. Atlanta, Georgia 30303

POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN

HWY 82/PAPERMILL ROAD / P.O. BOX 520
CROSSETT, AR 71635
870-567-7200

APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier: **LEE'S** Per *[Signature]*

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

2

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000864

CES Environmental Services

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25800

PO #	Customer: <u>LEE'S</u>	Date: <u>5/10/09</u>
Tractor <u>2610</u>	Address: <u>EL DORADO AR</u>	Time:
Trailer / Container Number <u>2285</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>F175LV FROTHER</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20%</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>TP</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<u>METHANOL PREP</u>
9 Caustic Wash & Dry		<u>COOL DOWN</u>
10 Caustic Wash, Rinse & Dry		<u>PRESSURE UP TO 10#</u>
11 Waste Water Surcharge		<u>VACUUM TEST, INT. & EXT.</u>
12 Solvent Wash (Diesel # Hours)		<u>CHANGE CLEANOUT CAPS, IF NECESSARY</u>
13 Solvent Wash (Stripper)		<u>57.016</u>
14 Exterior Tractor Wash		Authorized Additional Services:
15 Exterior Trailer Wash (w/o Internal)		<u>2. fittings N/C</u>
16 Exterior Trailer Wash (with Internal)		<u>8000 CALL OUT</u>
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JP

Date: 5/10/09

Inspected By: _____

Date: _____

Print Name: FRANK DAVIS

Date: 5/10/09

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Environmental Services

Tractor / Tank Cleaning Division
 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25679

PO #	Customer: <u>LEE'S</u>	Date: <u>4/21/09</u>
Tractor <u>2570</u>	Address:	Time: <u>13:01</u>
Trailer / Container Number <u>2285</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Detergent</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>74</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		
8 Detergent Wash, Rinse & Dry	<u>/</u>	Comments:
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date: 4/21/09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

OF LADING - SHORT FORM - ORIGINAL - NOT NEGOTIABLE

Subject to the contracts, classifications, and tariffs in effect
of the issue of this Bill of Lading.

☒ SHIPPING DOCUMENT
☐ MDSE RETURN REPORT
☐ CONTAINER RETURN REPORT

150357401
CUSTOMER P.O. NUMBER
628522

Harcros Chemicals Inc,

KANSAS CITY, KS SLS: 102-LTP

ORDER DATE

17-APR-2009

ESTIMATED SHIP DATE

DATE SHIPPED

The property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.

Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.



HARCROS
CHEMICAL GROUP

Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following state. The carrier shall not make delivery of this shipment without payment of freight and other lawful charges.

Per **Harcros Chemicals Inc.**
(SIGNATURE OF CONSIGNOR)

CONSIGNEE TO:

ALLCHEM - BLENDING & PACKAGING
ATTN: CHUCK
9011 E. ALMEDA RD.
HOUSTON, TX 77054

IF FREIGHT CHARGES,
ARE TO BE PREPAID,
WRITE OR STAMP HERE,
"TO BE PREPAID."

To Be Prepaid

C.O.D.

COLLECT ON DELIVERY
REMIT TO: HARCROS CHEMICALS INC

CARRIER: Ph: 713-796-8000 00207825
CUSTOMER PICK UP Act: 09098407

COD CHARGE TO BE PAID BY

☐ SHIPPER ☐ CONSIGNEE

HARCROS WILL ACCEPT COMPANY CHECK

NO. OF PKGS. ORDERED	O HM	CONTAINER TYPE	DESCRIPTION	GROSS / NET WEIGHT	LTL CLASS	PLACARDS PROVIDED OR APPLIED
1		TT	<p>SOAP, NEC. LIQUID</p> <p>NMFC 48580-3 CLASS 55</p> <p>NP 9</p> <p>BULK DELIVERY/#</p> <p>19841 200011 V: 05</p> <p>45000 LB CofA <i>RD</i> 8/17/09</p> <p>MSDS Required With Shipment</p> <p>Cost Signature: _____</p> <p>(INQUIRE WITH SALES REP ON PRICING)</p> <p>**LOAD 4/20 @ 9 A.M.**</p> <p>**HARCROS PICK-UP NUMBER: 705043**</p> <p>PICK UP 4-20-09 FOR DELIVER 4-21-09 AM</p> <p>TRUCK MUST HAVE WEIGHT TICKET</p> <p>DO YOU HAE ANY EMPTY CONTAINERS THAT NEED TO BE PICKED UP? YES _____ NO _____</p> <p>SIGNATURE _____</p> <p>HARCROS WILL BE CLOSED ON MAY 25TH</p> <p>Total Weight 45000TOT</p>	45000LBS	**	<p><input checked="" type="checkbox"/> NOT APPLICABLE</p> <p><input type="checkbox"/> NOT ACCEPTED</p> <p><input type="checkbox"/> 2.2 - NON-FLAMMABLE GAS</p> <p><input type="checkbox"/> 2.3 - POISON GAS</p> <p><input type="checkbox"/> 3 - FLAMMABLE</p> <p><input type="checkbox"/> 4.1 - FLAMMABLE SOLID</p> <p><input type="checkbox"/> 4.2 - SPONTANEOUSLY COMBUS</p> <p><input type="checkbox"/> 4.3 - DANGEROUS WHEN W</p> <p><input type="checkbox"/> 5.1 - OXIDIZER</p> <p><input type="checkbox"/> 5.2 - ORGANIC PEROXIDE</p> <p><input type="checkbox"/> 6.1 - POISON</p> <p><input type="checkbox"/> 8 - CORROSIVES</p> <p><input type="checkbox"/> 9 - CLASS 9</p> <p><input type="checkbox"/> DANGEROUS</p> <p><input type="checkbox"/> COMBUSTIBLE</p> <p><input type="checkbox"/> MARINE POLLUTANT</p> <p>WHEN APPLICABLE IS TI EMERGENCY RESPONSE GUI ON BOARD?</p> <p><input checked="" type="checkbox"/> YES</p> <p>X <i>RD</i> DRIVER INITIALS</p> <p>HARCROS BULK DELIVERIES</p> <p>I CERTIFY THAT CONNECTIONS TO O PIPING AND STORAGE TANKS A CORRECT AND READY FOR UNLOAD OF COMMODITY NAMED AND WILL ACC THE NET WEIGHT AND OR VOLUME THIS DELIVERY IN FULL</p> <p>X _____ CUSTOMER SIGNATURE</p> <p><i>Kenny Johnson</i> ORDER FILLED BY</p>

This is to certify that the above named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.
NOTE: Where rate is dependant on value the shipper hereby specifically states the declared value of such property to be not exceeding \$2.30 per pound.
O: Mark with "X" in this column to designate Hazardous Material as defined in Title 49 of the Code of Federal Regulations.

Harcros Chemicals Inc, Shipper,

Kenny Johnson
SHIPPER/LOADER SIGNATURE

Lee's Trucking
CARRIER/CUSTOMER SIGNATURE

Patricia
DRIVER SIGNATURE

Permanent Post-Office Address of Shipper:

5200 SPEAKER RD (SPEC)
KANSAS CITY, KS 66106

DELIVERY / CARRIER
COPY

2

IN CASE OF EMERGENCY CALL CHEMTREC AT (800)-424-9300

T-5017 (10/98)

EPAHQ011000867

CES Environmental Services
Cleaning Division
Ad. • Houston, TX 77021
(3) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25702

Customer:	LEE'S Trucking	Date:	4/16/08
Tractor	2510	Address:	
Trailer / Container Number	985	Dropped By:	
		Time:	7:21
		Need By:	ASAP

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Fatty Acid				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
2 Quick Rinse		LEL (<10%) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>✓</u> #2 <u>✓</u> #3 <u>✓</u> #4 <u>✓</u> #5 <u>✓</u>
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		CRASH BY AREA
9 Caustic Wash & Dry		check gaskets
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		3-3 w/o cap gaskets & 1
19 Hydroblaster (# Hours)		Dome gasket
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: B JR Date: 4/16/08
Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

EPAHO011000868

BILL OF LADING—SHORT FORM—Original—Not Negotiable
 Subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

SHIPPER'S No. **19696**

Name of Carrier

CARRIER'S NO.

INTERNATIONAL PAPER COMPANY

CONTAINERBOARD MFG. - MANSFIELD MILL

From **Mansfield, La.,**

From

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classifications in effect on the date hereof. If this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipment hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or Street address of Consignee—For purposes of notification Only)

Consigned to

Destination

State

County

Delivery Address*

(* To be filled in only when shipper desires and governing tariffs provide for delivery thereof.)

Route

Delivering Carrier

Car or Vehicle Initials

No.

NO PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*WEIGHT (SUBJ. TO CORR.)	CLASS OR RATE	CHECK COLUMN	Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor) If charges are to be prepaid, write or stamp here "To Be Prepaid." Received \$ to apply in prepayment of the charges on the property described hereon. Agent or Cashier Per (The signature here acknowledges only the amount prepaid.) Charges advanced \$
HPC	CTO 31,900 79,020 TANK # 307 Ruel 4/16/09				

If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight.
 NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property, the agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

**Shippers imprint in lieu of stamps not part of bill of lading approved by Interstate Commerce Commission.

INTERNATIONAL PAPER COMPANY, Shipper
 CONTAINERBOARD MFG.

Per

Agent, Per

Permanent post-office address of shipper,

Manhattanville Road, Purchase, New York 10577

Environmental Services
Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25714

PO #	Customer: <u>LEES</u>	Date: <u>4-18-9</u>
Tractor	Address:	Time:
Trailer / Container Number <u>1165</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Bo Diesel</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date: 4-18-9

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with re
thoroughness of the tank washing procedure or the total elimination of interior resi
moisture. Final inspection of the equipment remains the responsibility of the customer,
release CES Environmental Services, Inc., Cleaning Division, from any responsibility
from any allegations that the equipment was improperly cleaned, resulting in dam

CES Environmental Services, Inc., Cleaning Division, is in no manner responsi
damages or losses of equipment and/or materials left in their yard.

Print Name: GARY WARE Date: 11

Signature: [Signature]

Environmental Services

ner / Tank Cleaning Division
+ Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25600

PO # 88892	Customer: Lee's Lee's	Date: 4-13-09
Tractor 2380	Address: El Dorado AL	Time: 8:30
Trailer / Container Number 1195	Dropped By: Steve Lee	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☒ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	B.99.9 Fuel (BIOFUEL ANIMAL FAT)			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 21.0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JE
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning 1-3"		
Pump Cleaning		

Cleaned By: JE Date 4-13-09

Inspected By: Date

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Date

Signature:

EPAHQ011000871

Environmental Services

TANK WASH WORK ORDER

Tractor / Tank Cleaning Division
 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25645

PO #	Customer: <u>LEE'S</u>	Date: <u>4/13/09</u>
Tractor <u>261C</u>	Address:	Time: <u>10:40 AM</u>
Trailer / Container Number <u>2285</u>	Dropped By: <u>[Signature]</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20.0</u> #2 <u>20.0</u> #3 <u>20.0</u> #4 <u>20.0</u> #5 <u>20.0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>AR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments: <u>Internal</u> <u>External</u> <u>Wash</u> <u>All Gas</u>
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning <u>(3)</u>		
Pump Cleaning		

Cleaned By: AR Date: 4-13-09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

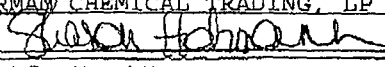
Print Name: FRANK DANIS Date: 4/13/09

Signature: [Signature]

EPAHO011000872

RIGHT BILL OF LADING--ORIGINAL--NOT NEGOTIABLE

Page 1 of 1

NAME OF CARRIER LEE'S TRUCKING		CARRIER'S NO.		SHIPPER'S NO. 040809	
RECEIVED, subject to the classifications and lawfully filled tariffs in effect on the date of the issue of this Bill of Lading, at BLENPAC SERVICES		FROM: SHIPPER (ORIGIN) HERMAN CHEMICAL TRADING, LP 99 TROPHY CLUB DRIVE TROPHY CLUB, TX 76262 PH#: (817) 430-5845		AGENT'S NO.	
on 04/13/09				ORDER NO. 10378	
				MULTI. INV. NO.	
<p>The property described below in apparent good order, except as noted (contents and condition of contents of packages (unknown), marked, consigned, and destined as indicated below which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. If on its route, otherwise to deliver to another carrier on the route to said destination, it is mutually agreed as in each center of all or any of, said property over all or any portion of said route to destination as to each party at any time interested in all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Freight Bill of Lading set forth (1) in Uniform Freight Classifications in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or agreement to a motor carrier shipment.</p> <p>Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions which he agrees to by the shipper and accepted for himself and his assigns.</p>					
Consigned to HCT c/o BLENPAC SERVICES 13609 INDUSTRIAL ROAD, GATE 5 GREENS PORT INDUSTRIAL PARK HOUSTON, TX 77015 PH#: (713) 453-5555 - WALTER			SPECIAL INSTRUCTIONS FOR 24-HOUR EMERGENCY RESPONSE CALL: CHEMTREC - (800) 424-9300		
DELIVERING CARRIER: LEE'S TRUCKING		VEH./CAR INITIAL:		VEH. NO.	
ROUTE:		Subject to Section 7 of conditions, if this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. Signature of Consignor _____ If charges are to be prepaid write or stamp here, "To be Prepaid." Received \$ 0.00 to apply in prepayment of the charges on this property described hereon. Agent or Cashier Per _____ (The signature here acknowledges only the amount prepaid.) Charges Advanced \$ 0.00 NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding \$0.00 per _____ "If the shipment moves between two ports by a carrier by water, the law requires that this bill of lading shall state whether it is "carrier's or shipper's weight". (Shipper's imprint in lieu of stamp; not a part of bill of lading approved by the Interstate Commerce Commission.			
NO. PACKAGES 1	HM X	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS UN3265, CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S. 8, PG II (TN=GLYCOLIC ACID) (HYDROXYACETIC ACID)	WEIGHT (SUBJECT TO CORR.) 48,000	CLASS OR RATE	
TOTAL PACKAGES 1		PRODUCT WEIGHT 48,000.0	PALLET WEIGHT	TOTAL WEIGHT 48,000.0	
REMIT C.O.D. TO:			Freight charges <input type="checkbox"/> Prepaid <input type="checkbox"/> Collect \$ 0.00 C.O.D. Amt. \$ 0.00	C.O.D. FEE <input type="checkbox"/> Prepaid <input type="checkbox"/> Collect \$ 0.00 TOTAL CHARGES \$ 0.00	
"This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation". HERMAN CHEMICAL TRADING, LP Shipper, LEE'S TRUCKING Agent, Per  Per _____ Permanent post office address of shipper 99 TROPHY CLUB DRIVE, TROPHY CLUB, TX 76262					

Environmental Services

/ Tank Cleaning Division
 11000 S. Gess Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25647

PO #	Customer: <u>LEE'S</u>	Date: <u>4/14/09</u>
Tractor <u>2930</u>	Address:	Time: <u>8:19 AM</u>
Trailer / Container Number <u>2005</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Fatty Acid</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>8</u> #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>8</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>1</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: _____
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____
8 Detergent Wash, Rinse & Dry	<u>✓</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>✓</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning <u>(2)</u> <u>✓</u>		
Pump Cleaning		

Cleaned By: JR Date: 4-14-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000874

BIGHT BILL OF LADING—SHORT FORM—Original—Not Negotiable

subject to the classifications and tariffs in effect on the date of issue of this Original Bill of Lading.

SHIPPER'S No. 19692

Lees

Name of Carrier

CARRIER'S NO. 171323

AT Mansfield, La., 4-13 20 09

From

INTERNATIONAL PAPER COMPANY

CONTAINERBOARD MFG. - MANSFIELD MILL

the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classifications in effect on the date hereof. If this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipment hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

(Mail or Street address of Consignee—For purposes of notification Only.)

Consigned to *Flex Tank System*

Destination *Channelview* State *TX* County

Delivery Address★ *16514 DeZAVALLA Rd. (281) 862-2900*

(★ To be filled in only when shipper desires and governing tariffs provide for delivery thereof.)

Route

Delivering Carrier *Lees*

Car or Vehicle Initials *2930* No. *2005*

NO PACKAGES	KIND OF PACKAGE, DESCRIPTION OF ARTICLES, SPECIAL MARKS, AND EXCEPTIONS	*WEIGHT (SUBJ. TO CORR.)	CLASS OR RATE	CHECK COLUMN	Subject to Section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse on the consignor the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges. (Signature of Consignor.) If charges are to be prepaid, write or stamp here "To Be Prepaid." Received \$ to apply in prepayment of the charges on the property described hereon. Agent or Cashier Per (The signature here acknowledges only the amount prepaid.) Charges advanced \$
1+1/L	<i>Tank# 307 Crude tall oil 34,080 79,200</i>				
	<i>Paul</i>	<i>4/14/09</i>			

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is carrier's or shipper's weight.
NOTE—Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property.
The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

**Shippers imprint in lieu of stamps not part of bill of lading approved by Interstate Commerce Commission.

Per

INTERNATIONAL PAPER COMPANY, Shipper

CONTAINERBOARD MFG.

Per *Linda Jones*

Permanent post-office address of shipper

2 Manhattanville Road, Purchase, New York 10577

1

Agent, Per *Russell Key*

25696

676-1460 • Fax: (713) 676-1676

PO #	Customer: <u>LEES</u>	Date: <u>4-15-09</u>
Tractor <u>2650</u>	Address:	Time: <u>5:35 PM</u>
Trailer / Container Number <u>1175</u>	Dropped By: <u>SCOTT Glover</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>XTOL 690</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>10</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>10</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>10</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>10</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JK</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: MC Date: 4-15-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000876

THIS SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in Carbon and retained by the Agent.

Shipper's No. 70157-1

Page

1 OF 1

Agent's No.

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR

Date 04/14/09

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 1324-02 FLUID MANAGEMENT

(Consignee)

If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL

SHIP TO ADDRESS:
12102 ALMEDA

Received \$
to apply in prepayment of the charges on the property described hereon

CITY, STATE, ZIP:
HOUSTON, TX 77045 USA

Agent or Cashier

ROUTE:

Per
(The signature here acknowledges only the amount prepaid)

DELIVERING CARRIER:
LEE'S TRUCKING COMPANY

DESTINATION:

Charges
Advanced \$

CAR INITIALS AND NUMBER:

SEAL NUMBER(S):

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 690-MODIFIED TALL OIL YMT0-0690 <i>time in 8:00 AM out. 9:05 AM</i> <i>x Oscar Garcia Hjo</i>	GROSS 77140 TARE 32200 NET 44940 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC (Signature of Consignor)
DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEASED TO CONSIGNEE

SPECIAL INSTRUCTIONS

PO# HOU-LEM-1037
Deliver On 04/15/2009 8AM-5PM
"LOAD TEMPERATURE 160 DEGREES F MAX." DELIVER PRODUCT MAX TEMP OF 150 DEGREES F AS CUSTOMER
WILL NOT PAY DEMURRAGE TO OFFLOAD!

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS
OFFERED/CORRECTLY
AFFIXED

EMERGENCY RESPONSE
INFORMATION ATTACHED

OSHA TAG(S)/LABEL(S) APPLIED
PRODUCT SPECIFIC LABEL, TAG, OR BAG

Georgia-Pacific Chemicals LLC

POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN
HWY 82/PAPER MILL ROAD / P.O. BOX 520
CROSSETT, AR 71635
870-567-7200

133 Peachtree St. N.E. Atlanta, Georgia 30303

APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier:

Per

Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000877

24343

Tractor 235	Customer: Martin	Date: 2/26/09
Trailer / Container Number 7755	Address:	Time:
	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Lube oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 0 #2 0 #3 0 #4 0 #5 0
2 Quick Rinse		LEL (<10%) #1 0 #2 0 #3 0 #4 0 #5 0
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 0 #2 0 #3 0 #4 0 #5 0
4 Hot Water Rinse		Toxic Vapor #1 0 #2 0 #3 0 #4 0 #5 0
5 Steam Only (Per Hour)		Signature: JL
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning	1 3" hose	
Pump Cleaning		

Cleaned By: **JL** Date: **2-26-9**

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

IZOLLubrizol Corporation
IMPLEX CHEMICAL

ALLULAH, LA

Charges are to be: Collect

Send Freight Bill to:

CHEVRON US C/O TRAX HOLDING
SJO 888
PO Box 521299
MIAMI FL 33152-1299
USA

FOR CHEMICAL EMERGENCY

Spill, Leak, Fire, Exposure or Accident

Call CHEMTREC

1-800-424-9300

Day or Night

For call originating outside of the U.S:
703-527-3887 Washington, DC Collect

STRAIGHT BILL OF LADING

SHORT FORM

ORIGINAL - NOT NEGOTIABLE

Received, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper, if applicable, otherwise to the rates, classifications and rules that have been established which govern the transportation of this shipment.

Route: MARTIN TRANSPORT, INC.
(99)

Ship Date: 2-25-09

Page 1 Of 1

Delivery Date: February 26, 2009

Delivery number: 81166203

Order Number: 918589

Customer Reference No.: 2344400

Booking Number:

Steamship Line:

Vessel:

Cut off Date:

Consigned to:

UNIVAR FOR CHEVRON

777 BRISBANE

HOUSTON TX 77061

USA

Pier Address:

HS685640

The property described below, in apparent good order, except as noted (contents and conditions of packages unknown), marked, consigned, and destined as indicated above, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification, in effect on the date hereof, if this is a rail or a rail-water. Or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that it is familiar with all the terms and conditions of the said bill of lading, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted itself and its assigns. IT IS DECLARED THAT THE PACKING OF THE CONTAINER/VEHICLE HAS BEEN CARRIED OUT IN ACCORDANCE WITH PARAGRAPH 5.4.2.1 OF THE IMDG CODE

Quantity/ Unit	HM	Description of Materials. Special Marks, and Instructions	Flash Point(°C)	Weight(lbs.)
5,800 Gallons		COMMODITY CODE 3811.21.0000 Lubricant Additive Composition LUBRIZOL® 2002D, CPS 2502899 ****Totals****		42,692
5,800 Gallons		INSULATED TANK TRUCK WITH PUMP AND 8 SECTIONS OF 3 IN HOSE REQUIRED AND AVAILABLE PUMP CENTER UNLOADER REQUIRED OR T/T WILL BE REFUSED		42,692
5989		CARRIER TO CONTACT KEN SIMS /KATHY SONES@713-641-9439 FOR DELIVERY APPOINTMENT. CARRIER MUST CONTACT KEN SIMS /KATHY SONES PRIOR TO LOADING MATERIAL INTO TRUCK AT LEAST 24 HOURS IN ADVANCE OF DELIVERY. PRODUCT MUST BE LOADED AT RECOMMENDED LOADING TEMPERATURE. CARRIER MUST MAINTAIN APPROXIMATE PRODUCT TEMPERATURE DURING TRANSIT* IN TRANSIT HEAT / INSULATED TRUCK. WITH PERIODIC TEMPERATURE MONITORING AND REPORTING TO PHIL ZIERTEN, CHEVRON COMMERICAL TRANSPORTATION MANAGER@PHONE NO. 502-634-2937.		44680
		FOR DELIVERY ON 02/26/09		

Security Notice: All carriers will be required to have the delivery number or order number noted above and a valid commercial drivers license upon arrival to the Lubrizol facility. Failure to be able to supply both items will result in the carrier service being rejected, until the information is provided.

The correct weight is as shown above subject to verification in accordance with any applicable agreement with carriers or their authorized agents.

Where the rates on any of the items listed above are dependent on value, the agreed or declared value of the property is hereby specifically stated by the shipper to be the released value per article or per distribution package that results in the lowest transportation charges unless otherwise specified.

(Shippers imprint in lieu of stamp; not a part of Bill of Lading approved by the Interstate Commerce Commission). The Fibre containers used for this shipment, if applicable, conform to the specification set forth in the box makers certificate thereon, and all other requirements of rule 41 of the Uniform Classification and Rules of the National Motor Freight Classification.

Subject to section 7 of conditions of applicable Bill of Lading. If this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement. The carrier shall not make delivery of this shipment without payment of freight and other lawful charges.

Signature:

(Signature of Consignor)

I Hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name(s), and classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to the applicable international and national governmental regulation.

Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent document in the vehicle. HAZMAT SECURED

Name of Carrier: MARTIN TRANSPORT, INC. (99)

PRO Number:

Per:

Ken M. Sones

2-25-09

(Signature - Not Initials)

Shipper: The Lubrizol Corporation (U.S.)
Prepared On: February 17, 2009

Per:

Environmental Services

TANK WASH WORK ORDER

Tank Cleaning Division
 11111 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25733

PO #	Customer: <u>JAM Dist</u>	Date: <u>4/28/09</u>
Tractor <u>283</u>	Address: <u>7010 Meyer Ave Rd / Houston, TX</u>	Time:
Trailer / Container Number <u>317</u>	Dropped By: <u>Wesley L. Backman</u>	Need By: <u>4/29/09 AM</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Lube Oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date 4-28-9

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000880

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Page: 1/1

Print Date: 04/24/2009 22:17:48

From **ExxonMobil Oil Corporation**

Sold to Cust: 1001113

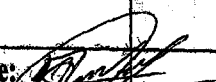
Date 04/24/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 317
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Delivery Note 831481600	Order No. 237238923	Purchase Order 201842	Release	F.O.B. Source	Freight COLLECT	Pro No.
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IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:

COPY

S H I P T O
J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description
98JD32	6,502		47,525	NG	Net Gallons		MOBIL DELVAC MX 15W-40,BULK.
<p>***PLEASE DO NOT SHIP UPS!!!*** SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.</p> <p>*** THIS SHIPMENT CONTAINS OIL *** ** 1 CARGO TANK **</p> <p>RESIDUE: "LAST CONTAINED"</p> <p>Signature:  Date: <u>04-27-09</u></p>							

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Total Pieces 6,502	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES
Total Ship Weight 47,525 LB			NOTE-Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____

Mobil Oil Corporation

Shipper, Per

Carrier, Per

- ☐ COQ provided to carrier
- ☐ Quart sample provided to carrier

CUSTOMER COPY

4-21-09

EPAHQ0011000881

Environmental Services

Cleaning Division
 1100 S. Rd. • Houston, TX 77021
 Tel: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24369

PO #	Customer: <u>JAM</u>	Date: <u>3.3.9</u>
Tractor	Address:	Time:
Trailer / Container Number <u>312</u>	Dropped By:	Need By:

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>570 oil</u>				
2 <u>1-100 oil</u>				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date: 3.3.9

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000882

Environmental Services

Cleaning Division

Houston, TX 77021

6-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25484

Customer:	JAM	Date:	4-4-09
Address:	7010 Hwy 111 AWA	Time:	3:00 AM
Trailer / Container Number	205 313	Dropped By:	Anthony Smith
		Need By:	

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	1			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 210 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JL
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)	/	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JL Date 4-4-09

Inspected By: Date

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Anthony Smith Date 4-4-09

Signature: [Signature]

EPAHO011000883

ADING - SHORT FORM

DELIVERY DATE 06-Apr-2009	DELIVERY TIME	BILL OF LADING 1001446241
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OR JAM 313	ORDER REFERENCE NO. 9199027/87377871	CUSTOMER'S REFERENCE NO. 201063
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the classifications and tariffs in effect on the date of the issue of the Bill of Lading Mobil Oil Corp. - Synthetics	SHIPPING DATE 06-Apr-2009
--------------------------------------------------------------------------------------------------------------------------	------------------------------

DE USRC AT BATTLEGROUND ROAD, DEER PARK, TX 77536, USA

CONSIGNED TO

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

The property described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. It is mutually agreed as to, each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification of tariff which governs the transportation of this shipment; and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If delivery is made by seller's truck or into vehicle of buyer, Bill of Lading provisions are not applicable and this document will serve as a delivery receipt.

PER	
GROSS	74560
TARE	30320
NET	44240

DISTRIBUTING
MYKAWA ROAD
HOUSTON TX 77033-1132
USA

SL&C <input type="checkbox"/>	LFVC <input type="checkbox"/>	Shprs Load Consig Unload <input type="checkbox"/>
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The description and weight indicated on this bill of lading are correct. Subject to verification by the Western Weighing and Inspection Bureau according to agreement. Shippers imprint in lieu of stamp, not part of bill of lading approved by the Interstate Commerce Commission.
* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

PLACARDS OFFERED

CARRIER SIGNATURE

HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	FREIGHT WEIGHT (SUB. TO CORR.)
----	-------------------------------------------------------	-----------------------------------

Chemicals, NEC

FREIGHT CODE/DESCRIPTION: 2899991 CHEMICALS, NEC

LINE: 1 PRODUCT CODE/DESCRIPTION: 5208810 / SPECTRASYN 4

CUSTOMER PRODUCT CODE: SPECTRASYN4

ORD. QTY:

PKG DESC: BLK - Bulk Liquid

44265 LB Pricing QTY:

24884.087 L30

MODE: Road

PRODUCT WT:

PACKAGED WT:

PKG WT:

NO PKGS:

1 TT PRODUCT VOL:

PACKAGED VOL:

SHELL CAP:

COEFF:

WT/VOL STD TEMP: 6.811

COR. LOAD TEMP:

WT/VOL LOAD TEMP:

COMPT NO:

API:

BATCH NO:

PO: 201063

VEH NO:

PO LINE ITEM:

RESIDUE: "LAST CONTAINED"

Instructions:

PICK UP INSTRUCTIONS:

VOPAK TERMINAL # USRC

2759 BATTLEGROUND ROAD

DEER PARK, TX 77536

BRENDA HAIRSTON # 281-604-6021

BRENDA.HAIRSTON@VOPAK.COM

See 313
104569
104570

Signature: *[Signature]*
Date: *4/7/09*

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT

Carrier certifies that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the commodity in the bill of lading or other shipping paper. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation. Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Permanent Post Office Address of Shipper: If charges are to be prepaid, write or stamp here, "To Be Prepaid."	SHIPPER Per	CARRIER <i>[Signature]</i>
COLLECT	Forward freight bills to: J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033-1132 USA	PER
PER		

(The signature here acknowledges only the amount prepaid.)

Environmental Services

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
ne: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDE

25561

PO #	Customer: <u>J.A.M.</u>	Date: <u>4.2.09</u>
Tractor <u>258</u>	Address:	Time: <u>4:23p</u>
Trailer / Container Number <u>313</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>210</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>2</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>2</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 _____ #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry	<u>/</u>	Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry	<u>/</u>	
10 Caustic Wash, Rinse & Dry	<u>/</u>	
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date 4-2-9

Inspected By: _____ Date _____

Print Name: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000885

Environmental Services

Cleaner / Tank Cleaning Division
 4 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25632

PO #	Customer: <u>J Am</u>	Date: <u>4-8-09</u>
Tractor	Address: <u>7010 my (CA) WA</u>	Time: <u>2:50 A</u>
Trailer / Container Number	Dropped By: <u>Anahony</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>huber oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature <u>A.R.</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry ✓		
9 Caustic Wash & Dry ✓		
10 Caustic Wash, Rinse & Dry ✓		
11 Waste Water Surcharge ✓		
12 Solvent Wash (Diesel # Hours) ✓		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Close Cleaning		
Pump Cleaning		

Cleaned By: A.R. Date: 4-8-09
 Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Anahony Smith Date: 4-8-09

OF LADING SHORT FORM

DELIVERY DATE	DELIVERY TIME	BILL OF LADING
06-Apr-2009		1001441876

AL NOT NEGOTIABLE

NAME OF CARRIER		ORDER REFERENCE NO. 9188371/87362149	CUSTOMER'S REFERENCE NO. 199182
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading FROM ExxonMobil Oil Corp. - Synthetics (PLANT CODE USRA) AT GULF STATES ROAD, BEAUMONT, TX 77701, USA			SHIPPING DATE 06-Apr-2009
SID-B/L NO.	CONSIGNED TO	NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding	
	J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033-1132 USA	The property described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. It is mutually agreed as to each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said Bill of Lading, including those on the back thereof, set forth in the classification of tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If delivery is made by seller's truck or into vehicle of buyer, Bill of Lading provisions are not applicable and this document will serve as a delivery receipt.	
	77313	PER GROSS TARE 29660	
SL&C <input type="checkbox"/>	LFVC <input type="checkbox"/>	Shprs Load Consig Unload <input type="checkbox"/>	NET
The description and weight indicated on this bill of lading are correct. Subject to verification by the Western Weighing and Inspection Bureau according to agreement. Shippers imprint in lieu of stamp, not part of bill of lading approved by the Interstate Commerce Commission. * If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"			PLACARDS OFFERED
			CARRIER SIGNATURE

HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	FREIGHT WEIGHT (SUB. TO CORR.)
----	-------------------------------------------------------	--------------------------------

THIS PRODUCT MAY PRODUCE A SHEEN IF SPILLED ON WATER

FREIGHT CODE/DESCRIPTION: 2899991 CHEMICALS, NEC

LINE: 1 PRODUCT CODE/DESCRIPTION: 5001474 / SPECTRASYN ULTRA 300

CUSTOMER PRODUCT CODE: SPECTRASYNULTRA300

ORD. QTY:

PKG DESC: BLK - Bulk Liquid

44092 LB Pricing QTY: 23701.444 L30

MODE: Road

PRODUCT WT:

PACKAGED WT:

PKG WT:

NO PKGS:

1 TT PRODUCT VOL:

PACKAGED VOL:

SHELL CAP:

COEFF:

WT/VOL STD TEMP: 7.101

COR. LOAD TEMP:

WT/VOL LOAD TEMP:

COMPT NO:

API:

BATCH NO:

PO: 199182

VEH NO:

77313

PO LINE ITEM:

Instructions:

RESIDUE: "LAST CONTAINED"

SPECTRASYN ULTRA 300

Signature: Richard Rodley

Date: 4-7-09

Seals: 058797 / 058999

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT

Carrier certifies that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the commodity in the bill of lading or other shipping paper. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation. Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Permanent Post Office Address of Shipper:

If charges are to be prepaid, write or stamp here, "To Be Prepaid."

COLLECT

PER

(The signature here acknowledges only the amount prepaid.)

SHIPPER

Cindy Helm / 4/6/09 Per

Cindy A Helm

Forward freight bills to:
J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033-1132
USA

CARRIER

JAM Dist #283-313

PER

Mr. R. Bod 4/07/09

WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE
ORIGINAL

PAGE 1 of 1

EPAHQ011000887

Environmental Services

Tractor/Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25567

Tractor # 283	Customer: JAM	Date: 4/6/09
Trailer / Container Number 318	Address: Diner 1129	Time: 12:21
	Dropped By: [Signature]	Need By: 4/7/09 5AM

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lube oil	5-40			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 21.0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JL
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)	/	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: **MC** Date: **4-6-9**

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

TANK WASH WORK ORDER

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Pag

Print Date: 03/26/2009 C

From ExxonMobil Oil Corporation

Sold to Cust: 1001113

Date 03/26/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container N 318
Delivery Note 831170726	Order No. 236924759	Purchase Order 200622	Release	F.O.B. Source	Freight COLLECT
				Pro No.	

IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:

SHIP TO

J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description
98FF22	6,501		49,447	NG	Net Gallons		MOBILGARD L540,BULK.
<p>***PLEASE LOAD EARLY AMI***</p> <p>SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.</p> <p>170434</p> <p>*** THIS SHIPMENT CONTAINS OIL ***</p> <p>** 1 CARGO TANK **</p>							

The carrier named hereon, by signing this bill of acknowledges receipt from ExxonMobil Oil Corp the property described hereon, in apparent good except as noted (contents and condition of co of packages unknown), marked, consigned, destined as indicated hereon, which said carrier word carrier being understood throughout this lading as meaning any person or corporate possession of the property under the contract) to carry to its usual place of delivery at destination if on its route, otherwise to deliver another carrier on the route to said destination. mutually agreed, as to each carrier of all or a said property over all or any portion of said route destination and as to each party at any interested in all or any of said property, that service to be performed hereunder shall be subject all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading receipt of goods only and a carrier shall have recourse on consignor for payment of freight and charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo supplied for this shipment is a proper container for transportation of this commodity as described by shipper.

The fiber boxes used for this shipment conform to specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform National Motor Freight Classifications.

Total Pieces
6,501

Total Ship Weight
49,447 LB

FOR HELP IN EMERGENCIES
INVOLVING SPILL, LEAK, FIRE
OR EXPOSURE CALL TOLL FREE
(800)424-9300 DAY OR NIGHT.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

RECEIVED ABOVE PRODUCTS AND QUANTITIES

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

Per

Shipper, Per

Carrier, Per

☐ COQ provided to carrier☐ Quart sample provided to carrier

CUSTOMER

ExxonMobil Oil Corporation

JAN 3/26/09

EPAHQ0011000889

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Page: 1

Print Date: 03/26/2009 07:43:

From **ExxonMobil Oil Corporation**

Sold to Cust: 1001113

Date 03/26/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 318
Delivery Note 831170726	Order No. 236924759	Purchase Order 200622	Release	F.O.B. Source	Freight COLLECT
IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:				S H I P T O J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033	

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description
98FF22	6,501		49,447	NG	Net Gallons		MOBILGARD L540,BULK. <div style="border: 1px solid black; padding: 10px; width: fit-content; margin: 10px auto;"> DEL TO BARGE ON 4/4/09 </div>
<p>***PLEASE LOAD EARLY AMI***</p> <p>SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.</p> <p>170434</p> <p>*** THIS SHIPMENT CONTAINS OIL ***</p> <p>** 1 CARGO TANK **</p>							

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order except as noted (contents and condition of content of packages unknown), marked, consigned, an destined as indicated hereon, which said carrier (th word carrier being understood throughout this bill o lading as meaning any person or corporation i possession of the property under the contract) agree to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any o said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Total Pieces 6,501 Total Ship Weight 49,447 LB	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES <i>[Signature]</i> NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____
ExxonMobil Oil Corporation		Shipper, Per <i>[Signature]</i>	Carrier, Per <i>[Signature]</i> 3/26/09

CUSTOMER COPY

EPAHQ011000890

Environmental Services

TANK WASH WORK ORDER

10000 / Tank Cleaning Division
 10000 Briggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25569

PO #	Customer: <u>J.A.M.</u>	Date: <u>3/31/09</u>
Tractor <u>271</u>	Address:	Time: <u>15:30</u>
Trailer / Container Number	Dropped By: <u>Pere Mirona</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Diesel</u>				
2 <u>Diesel</u>				
3 <u>Diesel</u>				
4 <u>Gas</u>				
5 <u>Diesel</u>				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>2</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>[Signature]</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments: <u>ASP.P</u>
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
0 Caustic Wash, Rinse & Dry		
1 Waste Water Surcharge		
2 Solvent Wash (Diesel # Hours)		
3 Solvent Wash (Stripper)		
4 Exterior Tractor Wash		
5 Exterior Trailer Wash (w/o Internal)		
6 Exterior Trailer Wash (with Internal)		
7 Exterior Acid Brite Wash		Authorized Additional Services:
8 Hand Labor (# Men / # Hours)		
9 Hydroblaster (# Hours)		
0 Solvent Wash (Green Stripper)		
1 Passivation		
2 se Cleaning		
3 mp Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Completed By: JL Date: 3.31.9

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

EPAHQ011000891

J.A.M.
 Distributing Co.

RETAIN/PRIOR CARGO SHEET

 JQR002 Rev 1
 12.28.07
DATE: 3/31/09DRIVER: RenemUNIT: 271

COMPARTMENT NUMBER	PRODUCT RETAINED IN COMPARTMENT	GALLONS RETAINED IN COMPARTMENT	LAST PRODUCT IN THIS COMPARTMENT IF EMPTY	EMPTY COMPARTMENT VERIFICATION	SPECIAL INSTRUCTIONS
1	0	0	Diesel		
2	0	0	Diesel		
3	0	0	Diesel		
4	0	0	Unleaded Gas		
5	0	0	Diesel		
6					
LAST PRODUCT IN HOSE REEL: TANKWAGON USE ONLY	Diesel				
LAST PRODUCT IN PUMP: TANKWAGON USE ONLY	Diesel				

THIS FORM MUST BE FILLED OUT COMPLETELY AND ATTACHED TO THE RED RETAIN TAG AND THE RACK MANIFEST FOR ALL PRODUCTS RETAINED. THE "EMPTY COMPARTMENT VERIFICATION" BOX MUST BE INITIALED BY THE DRIVER USING THIS PIECE OF EQUIPMENT NEXT. IF A COMPARTMENT SHOWS TO BE EMPTY, THE DRIVER USING THIS PIECE OF EQUIPMENT NEXT, MUST VERIFY THAT ALL COMPARTMENTS ARE EMPTY BY FULLY BUCKET DRAINING THE COMPARTMENT OR SAFELY GETTING ON TOP TO OPEN THE DOME LIDS FOR VERIFICATION. THIS FORM MUST BE TURNED IN WITH THE DRIVERS PAPERWORK TO KEEP ON FILE.

Environmental Services

TANK WASH WORK ORDER

Tank Cleaning Division
 11000 Gs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25521

PO #	Customer: <i>JAM</i>	Date: <i>3-28-9</i>
Tractor <i>762</i>	Address: <i>7010 N. KAWA</i>	Time: <i>2:00</i>
Trailer / Container Number <i>319</i>	Dropped By: <i>Wes B</i>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>Oil</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
5 Steam Only (Per Hour)		Signature: <i>CP</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: *CP* Date: *3-28-09*

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Environmental Services

Cleaning Division

11111 Rd. • Houston, TX 77021

(713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25391

PO #	Customer: <u>JAm</u>	Date: <u>3-20-09</u>
Tractor <u>268</u>	Address:	Time: <u>9:57 AM</u>
Trailer / Container Number <u>32</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Oil</u>				
2 "				
3 "				
4 "				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5
5 Steam Only (Per Hour)		Signature: <u>CP</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date: 3-23-09

Inspected By: _____ Date: _____

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CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Milton Pettit Date: 3-2-09

Signature: Milton Pettit

EPAHQ011000894

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Page: 1/1

Print Date: 03/20/2009 12:19:43

From **ExxonMobil Oil Corporation**

Sold to Cust: 1001113

Date 03/20/2009	Ship To Cust. 2117414	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin PORT ALLEN LUBES PLA	Trailer/Container No. 32
Delivery Note 831108462	Order No. 236848993	Purchase Order 200343	Release	F.O.B. Source	Freight COLLECT
				Pro No. A213Z4576871	

IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:

S
H
I
P

T
O

J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033-0000

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description	
981507	2,545		18,545	NG	Net Gallons		MOBIL DTE 24,BULK.	
981122	2,022		14,918	NG	Net Gallons		MOBIL DTE 25,BULK.	
98BZ55	14,660		14,660	LB	US pound		SPARTAN EP 320,BULK.	
PLEASE LOAD BETWEEN 9AM AND 11AM								
*** THIS SHIPMENT CONTAINS OIL *** ** 1 CARGO TANK **								

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Total Pieces 19,227	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES
Ship Weight 123 LB			NOTE-Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per

Shipper, Per

Carrier, Per

☐ COQ provided to carrier

☐ Quart sample provided to carrier

INTERNAL USE COPY

ExxonMobil Oil Corporation

EPAH0011000895

Services

Cleaning Division

• Houston, TX 77021

676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25514

Customer: <u>J.A.M.</u>	Date: <u>3-26-9</u>
Address: <u>7010 Mykawa</u>	Time: <u>6:07 to</u>
Tractor: <u>283</u>	Need By: <u>3-27-9 5:00</u>
Trailer / Container Number: <u>319</u>	Dropped By: <u>Ron Campbell</u>

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Lube Oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JL</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)	/	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JL Date 3-26-9

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to thoroughness of the tank washing procedure or the total elimination of interior residues or moisture. Final inspection of the equipment remains the responsibility of the customer, and the release of CES Environmental Services, Inc., Cleaning Division, from any responsibility for claim from any allegations that the equipment was improperly cleaned, resulting in damage or damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

EPAHO011000896

CES Environmental Services

Tank Cleaning Division
 7700 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24203

PO #	Customer: <u>JAM</u>	Date: <u>3.5.09</u>
Tractor <u>(281)</u>	Address:	Time: <u>11:44A</u>
Trailer / Container Number	Dropped By: <u>A. Salay</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>diesel</u>				
2 <u>diesel</u>				
3 <u>diesel</u>				
4 <u>gasoline</u>				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JPR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<u>STAINS ON EXTERIOR</u>
9 Caustic Wash & Dry		<u>PRIVIZ TO TANKWASH</u>
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JPR Date: 3.5.9

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

EPAHQ011000897

Environmental Services

Cleaning Division
Houston, TX 77021
676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24248

Customer: JAM Date: 3-11-9

Address: _____ Time: _____

Trailer / Container Number: 317 Dropped By: _____ Need By: _____

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>011</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	<u>/</u>	
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date: 3-11-9

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Straight Bill of Lading

ORIGINAL - NOT NEGOTIABLE

From **ExxonMobil Oil Corporation**

Print Date

Sold to Cust: 1001113

Date 03/10/2009	Ship To Cust. 2021478	SCAC No. WCL1	Carrier FOR "WILL CALL" CUST	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 317
Delivery Note 831001307	Order No. 236723738	Purchase Order 199859	Release	F.O.B. Source	Freight COLLECT
IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:				S H I P T O J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033	

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description	
981397	6,508		48,075	NG	Net Gallons		MOBILGARD 300,BULK.	
SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS. *** THIS SHIPMENT CONTAINS OIL *** ** 1 CARGO TANK **								
<p>The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.</p> <p>This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.</p> <p>If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.</p> <p>The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.</p>								

Total Pieces 6,508 Total Ship Weight 48,075 LB	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____
ExxonMobil Oil Corporation	Shipper, Per _____	Carrier, Per _____	<input type="checkbox"/> COQ provided to carrier <input type="checkbox"/> Quart sample provided to carrier

CARRIER COPY

EPAHQ011000899

Environmental Services

Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24361

PO #	Customer: <u>J.A.M.</u>	Date: <u>3/9/09</u>
Tractor <u>285</u>	Address:	Time: <u>10:00 AM</u>
Trailer / Container Number <u>314</u>	Dropped By: <u>[Signature]</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Lube oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>20.0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>6</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>6</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>[Signature]</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: [Signature] Date 3-9-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Environmental Services

Tank Cleaning Division

11000 Gggs Rd. • Houston, TX 77021

:(713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24327

J #	Customer: <u>JAM Dist</u>	Date: <u>2/25/09</u>
Tractor <u>283</u>	Address:	Time:
Trailer / Container Number <u>314</u>	Dropped By: <u>MELVIN L. BACKMAN</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Mobil GARD 570 (LUBE OIL)			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JPR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry	/	
10 Caustic Wash, Rinse & Dry	/	
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)	/	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JPR Date 2-25-9

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

Page: 1/1

Print Date: 02/20/2009 14:42:37

From **ExxonMobil Oil Corporation**

Sold to Cust: 1001113

Date 02/20/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 314
Delivery Note 830808201	Order No. 236547685	Purchase Order 199147	Release	F.O.B. Source	Freight COLLECT
IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:				S H I P T O J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033	

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description
981218	6,495		50,277	NG	Net Gallons		MOBILGARD 570,BULK.
SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.							
0167798							
*** THIS SHIPMENT CONTAINS OIL ***							
** 1 CARGO TANK **							
					40-1		28' 8"
					40-2		31' 8"
							33' 8"

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Please 05 Ship Weight 27 LB	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____
------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

<input type="checkbox"/> COQ provided to carrier <input type="checkbox"/> Quart sample provided to carrier

CARRIER COPY

Oil Corporation

Shipper, Per

Carrier, Per

EPAHQ0011000902

Environmental Services

Truck Cleaning Division
 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24324

#	Customer: JACM	Date: 2-24-9
Tractor 258	Address: 7010 Mykawa Houston, Tx	Time: 6:09 PM
Trailer / Container Number 318	Dropped By: Ron Campbell	Need By: ASAP

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Lubeoil 150 Spectrasyn 100			

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
Air Dry		Oxygen (19.5% -23.5%) #1 <input checked="" type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/>
Quick Rinse		LEL (<10%) #1 <input checked="" type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/>
Cold Water Rinse		CO2 (<35 ppm) #1 <input checked="" type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/>
Hot Water Rinse		Toxic Vapor #1 <input checked="" type="checkbox"/> #2 <input type="checkbox"/> #3 <input type="checkbox"/> #4 <input type="checkbox"/> #5 <input type="checkbox"/>
Steam Only (Per Hour)		Signature: JR
Steam & Dry		Stripper Usage:
Rinse, Steam & Dry		Comments:
Detergent Wash, Rinse & Dry	✓	
Caustic Wash & Dry		
Caustic Wash, Rinse & Dry		
Waste Water Surcharge	✓	
Solvent Wash (Diesel # Hours)		
Solvent Wash (Stripper)		
Exterior Tractor Wash		
Exterior Trailer Wash (w/o Internal)		
Exterior Trailer Wash (with Internal)		
Exterior Acid Brite Wash		Authorized Additional Services:
Hand Labor (# Men / # Hours)		
Hydroblaster (# Hours)		
Solvent Wash (Green Stripper)		
Passivation		
Cleaning		
Cleaning		

Inspected By: JR Date: 2/25/99

Ordered By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

OF LADING SHORT FORM

DELIVERY DATE

19-Feb-2009

DELIVERY TIME

BILL OF LADING

1001421714

NEGOTIABLE

OF CARRIER

ORDER REFERENCE NO.
9186901/87302613

CUSTOMER'S REFERENCE NO.
199009

SHIPPING DATE

19-Feb-2009

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading

FROM ExxonMobil Oil Corp. - Synthetics

(PLANT CODE USTG) AT END OF SYCAMORE STREET, BEAUMONT, TX 77704, USA

SID-B/L NO.

CONSIGNED TO

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

The property described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. It is mutually agreed as to each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification of tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If delivery is made by seller's truck or into vehicle of buyer, Bill of Lading provisions are not applicable and this document will serve as a delivery receipt.

PER

GROSS

TARE

NET

72740

27280

45460

SL&C

LFVC

Ships Load
Consign Unload

The description and weight indicated on this bill of lading are correct. Subject to verification by the Western Weighing and Inspection Bureau according to agreement. Shippers imprint in lieu of stamp, not part of bill of lading approved by the Interstate Commerce Commission.
* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

PLACARDS OFFERED

CARRIER SIGNATURE

HM DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS

FREIGHT WEIGHT
(SUB. TO CORR.)

Chemicals, NEC

THIS PRODUCT MAY PRODUCE A SHEEN IF SPILLED ON WATER

FREIGHT CODE/DESCRIPTION: 2899991 CHEMICALS, NEC

LINE: 1 PRODUCT CODE/DESCRIPTION:

5001103

/ SPECTRASYN 100

CUSTOMER PRODUCT CODE: SPECTRASYN100

ORD. QTY:

PKG DESC: BLK - Bulk Liquid

44862 LB Pricing QTY:

24092.510 L30

MODE: Road

PRODUCT WT:

PACKAGED WT:

PKG WT:

NO PKGS:

1 TT PRODUCT VOL:

PACKAGED VOL:

SHELL CAP:

COEFF:

WT/VOL STD TEMP: 7.121

COR. LOAD TEMP:

WT/VOL LOAD TEMP:

COMPT NO:

API:

BATCH NO:

PO: 199009

VEH NO:

PO LINE ITEM:

Instructions:

RESIDUE: "LAST CONTAINED"

Signature: Michael Womack Jr.

Date: 2-20-09

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT

Carrier certifies that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the commodity in the bill of lading or other shipping paper. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation. Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

SHIPPER

Cindy A Helm
Per

Cindy A Helm

Permanent Post Office Address of Shipper:

If charges are to be prepaid, write or stamp here, "To Be Prepaid."

COLLECT

Forward freight bills to:
J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033-1132
USA

CARRIER

PER

PER

(The signature here acknowledges only the amount prepaid.)

WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE

EPAHO011000904

Environmental Services

Tank Cleaning Division
 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26221

PO #	Customer: <u>TAM</u>	Date: <u>2-13-09</u>
Tractor <u>252</u>	Address: <u>7010 WYLCAM</u>	Time: <u>5:00</u>
Trailer / Container Number <u>318</u>	Dropped By: <u>Anthony Smith</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Liba</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) <u>#1 0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry	<u>/</u>	
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)	<u>/</u>	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JE Date 2-13-09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Anthony Smith Date 2-13-09

Signature: Anthony Smith

EPAHQ011000905

TANK WASH WORK ORDER

BILL OF LADING - SHORT FORM

DELIVERY DATE	DELIVERY TIME	BILL OF LADING
11-Feb-2009		1001415353

NEGOTIABLE OF CARRIER		ORDER REFERENCE NO. 9183953/87283906	CUSTOMER'S REFERENCE NO. 198518
RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading FROM ExxonMobil Oil Corp. - Synthetics (PLANT CODE USRA) AT GULF STATES ROAD, BEAUMONT, TX 77701, USA			SHIPPING DATE 11-Feb-2009
SID-B/L NO.	CONSIGNEE TO	NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding	The property described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. It is mutually agreed as to, each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification of tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If delivery is made by seller's truck or into vehicle of buyer, Bill of Lading provisions are not applicable and this document will serve as a delivery receipt.
J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033-1132 USA		PER GROSS	
		TARE	
		NET	
SL&C <input type="checkbox"/>	LFVC <input type="checkbox"/>	Shprs Load Consig Unload <input type="checkbox"/>	PLACARDS OFFERED
The description and weight indicated on this bill of lading are correct. Subject to verification by the Western Weighing and Inspection Bureau according to agreement. Shippers imprint in lieu of stamp, not part of bill of lading approved by the Interstate Commerce Commission. * If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"			CARRIER SIGNATURE

HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS	FREIGHT WEIGHT (SUB. TO CORR.)
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THIS PRODUCT MAY PRODUCE A SHEEN IF SPILLED ON WATER

FREIGHT CODE/DESCRIPTION: 2991290 LUBRICATING OIL, NEC

LINE: 1 PRODUCT CODE/DESCRIPTION: 5001088 / PURESYN 150

CUSTOMER PRODUCT CODE: PURESYN150

ORD. QTY:

PKG DESC: BLK - Bulk Liquid

44597 LB Pricing QTY: 24071.905 L30

MODE: Road

PRODUCT WT:

PACKAGED WT:

PKG WT:

NO PKGS:

1 TT PRODUCT VOL:

PACKAGED VOL:

SHELL CAP:

COEFF:

WT/VOL STD TEMP: 7.081

COR. LOAD TEMP:

WT/VOL LOAD TEMP:

COMPT NO:

API:

BATCH NO:

PO: 198518

VEH NO:

PO LINE ITEM:

Instructions:

RESIDUE: "LAST CONTAINED"

Signature: Alex Custodio
 Date: 02-11-09

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT

Carrier certifies that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the commodity in the bill of lading or other shipping paper. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation. Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Permanent Post Office Address of Shipper:

If charges are to be prepaid, write or stamp here, "To Be Prepaid."

COLLECT

PER

(The signature here acknowledges only the amount prepaid.)

Forward freight bills to:
 J.A.M. DISTRIBUTING
 7010 MYKAWA ROAD
 HOUSTON TX 77033-1132
 USA

SHIPPER

Cindy Helm/LOADER: [Signature]
 2/11/09 Per

Cindy A Helm

CARRIER

PER

WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE

EPAHO011000906

J.A.M. Distributing Co.

Mobil Oil Lubricants

J.A.M. Loading Request Form

Scheduled Loading Date: 2/11/09 0800 BCS

Order Key # 9183953/1001415353

Trailer # 318

Product Description: 6300 PURESYN 150

PLEASE LOAD PRODUCT AS FOLLOWS

Trailer Compartment #	Fill Capacity	Requested Gallons	Product Requested
1	7000	6300 <i>Ø</i>	<u>PURESYN 150</u>
2			
3			
4			

Product trailer last contained? **WASH AND DRY**

How was trailer cleaned? **WASH AND DRY**

Delivery From? _____

If there are any problems with this request, please contact:
Dispatch at (713) 844-7752 or Alex Beltran at (713) 844-7765

Load Requested By: *A3*

Load Request Verified By: *MM*

Environmental Services

Trainer / Tank Cleaning Division
904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26274

PO #	Customer: <u>JAM</u>	Date: <u>2-9-9</u>
Tractor <u>262</u>	Address: <u>7010 MYKAWA</u>	Time: <u>12-45</u>
Trailer / Container Number <u>319</u>	Dropped By: <u>Cubs Batiste</u>	Need By: <u>today</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) # <u>20</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>SL</u>
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: SL Date: 2/9/09
 Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

Environmental Services

Trainer / Tank Cleaning Division
 44 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26286

PO #	Customer: <u>JAM</u>	Date: <u>2-10-9</u>
Tractor <u>262</u>	Address: <u>2010 MYKAWA</u>	Time: <u>1:30</u>
Trailer / Container Number <u>318</u>	Dropped By: <u>Curtis B</u>	Need By: <u>TODAY</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Lube Oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JPR</u>
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JPR Date 2-10-9

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

EPAHO011000909

Environmental Services

Tank Cleaning Division
 1301 S. Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26389

#	Customer: <u>JAM</u>	Date: <u>2/11/09</u>
Tractor <u>265</u>	Address:	Time:
Trailer / Container Number <u>317</u>	Dropped By: <u>Demir Hald J.A.A. DIST.</u>	Need By:

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>L-400</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JPR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JPR Date: 2-11-9

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

OF LADING SHORT FORM

DATE OF LADING 10-Feb-2009 DELIVERY TIME 1001411507

AL NOT NEGOTIABLE

NAME OF CARRIER

ORDER REFERENCE NO.
9181262/87274454

CUSTOMER'S REFERENCE NO.
198101

RECEIVED, subject to the classifications and tariffs in effect on the date of the issue of the Bill of Lading
FROM ExxonMobil Oil Corp. - Synthetics
(PLANT CODE USTG) AT END OF SYCAMORE STREET, BEAUMONT, TX 77704, USA

SHIPPING DATE
10-Feb-2009

SID-B/L NO. CONSIGNED TO

J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033-1132
USA

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of the property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

PER

GROSS

72020

TARE

27,320

NET

44,700

The property described below, in apparent good order, except as noted, (contents and conditions of contents of packages unknown), marked, consigned and destined as indicated below, which said carrier (the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination. It is mutually agreed as to each carrier of all or any said property over all or any portion of said route to destination, and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification of tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns. If delivery is made by seller's truck or into vehicle of buyer, Bill of Lading provisions are not applicable and this document will serve as a delivery receipt.

PLACARDS OFFERED

CARRIER SIGNATURE

SLAC LFVC Ship Load Consig Unload
☐ ☐ ☐

The description and weight indicated on this bill of lading are correct. Subject to verification by the Western Weighing and Inspection Bureau according to agreement. Shippers imprint in lieu of stamp, not part of bill of lading approved by the Interstate Commerce Commission.
* If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

HM DESCRIPTION OF ARTICLES, SPECIAL MARKS AND EXCEPTIONS

FREIGHT WEIGHT
(SUB. TO CORR.)

THIS PRODUCT MAY PRODUCE A SHEEN IF SPILLED ON WATER

FREIGHT CODE/DESCRIPTION: 2899991 CHEMICALS, NEC

LINE: 1 PRODUCT CODE/DESCRIPTION: 5211923 / MOBILAD PS164

CUSTOMER PRODUCT CODE: MOBILADPS164 50W

ORD. QTY:

PKG DESC: BLK - Bulk Liquid

44479 LB Pricing QTY: 23588.802 L

MODE: Road

PRODUCT WT:

PACKAGED WT:

PKG WT:

NO PKGS:

1 TT PRODUCT VOL:

PACKAGED VOL:

SHELL CAP:

COEFF:

WT/VOL STD TEMP: 7.297

COR. LOAD TEMP:

WT/VOL LOAD TEMP:

COMPT NO:

API:

BATCH NO:

PO: 198101

VEH NO:

PO LINE ITEM:

Instructions:

TRA-317

S/N - 168850-51

LBS - 44700

GALS - 6253

RESIDUE: "LAST CONTAINED"

Signature: Alex Custodio

Date: 02-11-08

FOR CHEMICAL EMERGENCY CALL CHEMTREC @ 1-800-424-9300 or 1-703-527-3887 DAY OR NIGHT

Carrier certifies that the cargo tank supplied for this shipment is a proper container, as required in part 173, for the transportation of the emergency in the bill of lading or other shipping paper. This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation. Subject to section 7 of conditions of applicable bill of lading, if this shipment is to be delivered to the consignee without recourse of the consignor, the consignor shall sign the following statement: The carrier shall not make delivery of this shipment without payment of freight and all other lawful charges.

Permanent Post Office Address of Shipper:
changes are to be prepaid, write or stamp
re. "To Be Prepaid."

COLLECT

Forward freight bills to:
J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033-1132
USA

CARRIER

PER

The signature here acknowledges only the amount prepaid.)

WHEN FREIGHT IS PREPAID SEND SHIPPING NOTICE WITH INVOICE

EPAHO011000911

Environmental Services
 Tank Cleaning Division
 44 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22795

PO #	Customer: <u>J.A.M.</u>	Date: <u>1/22/09</u>
Tractor <u>B 283</u>	Address:	Time:
Trailer / Container Number <u>318</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Lube oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JE Date: 1-22-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

EPAHO011000912

Environmental Services

Cleaning Division
 12345 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22840

PO #	Customer: <u>JAM.</u>	Date: <u>10/23/09</u>
Tractor <u>261</u>	Address:	Time: <u>12:53</u>
Trailer / Container Number <u>317</u>	Dropped By: <u>Ron Elliott</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Diesel</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JL</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JL Date: 10/24/09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000913

CES Environmental Services
Cleaning Division
• Houston, TX 77021
• 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22759

Customer:	Evergreen / JAM	Date:	2-2-9
Address:		Time:	
Trailer / Container Number	Dropped By:	Need By:	

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum #Rolloff
1	Oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
Steam Only (Per Hour)		Signature: JE
Steam & Dry		Stripper Usage:
Rinse, Steam & Dry		Comments:
Detergent Wash, Rinse & Dry	/	
Caustic Wash & Dry		
Caustic Wash, Rinse & Dry	/	
Waste Water Surcharge	/	
Solvent Wash (Diesel # Hours)		
Solvent Wash (Stripper)		
Exterior Tractor Wash		
Exterior Trailer Wash (w/o Internal)		
Exterior Trailer Wash (with Internal)	/	
Exterior Acid Brite Wash		
and Labor (# Men / # Hours)		
Hydroblaster (# Hours)		
Solvent Wash (Green Stripper)		
Passivation		
Cleaning		
Cleaning		

By: JE Date 2-2-9

By: Date

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Ron E. Hoot Date 2-2-09

Signature: JE

Environmental Services

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26394

PO #	Customer: <u>J.A.M</u>	Date: <u>2-4-9</u>
Tractor <u>265</u>	Address: <u>7010 Mykawa</u>	Time: <u>6:30 PM</u>
Trailer / Container Number <u>318</u>	Dropped By: <u>Ron Campbell</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Lube Oil</u>		<u>X</u>	
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>80</u> #2 <u>80</u> #3 <u>80</u> #4 <u>80</u> #5 <u>80</u>
2 Quick Rinse		LEL (<10%) #1 <u>8</u> #2 <u>8</u> #3 <u>8</u> #4 <u>8</u> #5 <u>8</u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>8</u> #2 <u>8</u> #3 <u>8</u> #4 <u>8</u> #5 <u>8</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>8</u> #2 <u>8</u> #3 <u>8</u> #4 <u>8</u> #5 <u>8</u>
5 Steam Only (Per Hour)		Signature: <u>SR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)	<u>/</u>	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: SR Date 2/5/9
 Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

TX 77021
Fax: (713) 676-1676

TANK WASH WORK ORD

22367

Customer:	Jan	Date:	1/5/09
Address:		Time:	14:55
Trailer / Container Number	312	Dropped By:	Leir Ponce
		Need By:	

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Lube oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 21.0 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 0 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 0 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: JT
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	/	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	/	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JT Date: 1-5-09

Inspected By: Date:

Print Name: Date:

Signature:

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000916

CES Environmental Services

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22621

PO #	Customer: <u>JAM</u>	Date: <u>2-3-09</u>
Tractor <u>283</u>	Address: <u>7010 Mykawa</u>	Time: <u>3:05</u>
Trailer / Container Number <u>318</u>	Dropped By: <u>Anthony Smith</u>	Need By:

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>MOBIL GARD 570 OIL</u>			
2				
3	<u>Lube oil</u>			
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>26</u> #2 <u>11</u> #3 <u>11</u> #4 <u>11</u> #5 <u>11</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>C.P.</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: C.P. Date 2-3-09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Anthony Smith Date 2-3-09

Signature: [Signature]

EPAHO011000917

Price

Price # 85

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

From ExxonMobil Oil Corporation

Page: 1
Print Date: 02/02/2009 07:42
Sold to Cust: 1001113

Date 02/02/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 318
Delivery Note 830605196	Order No. 236327399	Purchase Order 198308	Release	F.O.B. Source	Freight COLLECT
IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:				S H I P T O J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033	

Material	Quantity Shipped	Quantity Open	Weight	UOM	UOM Desc	H M	Matl. Description
981218	6,527		50,525	NG	Net Gallons		MOBILGARD 570,BULK.
SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.							
0129000							
*** THIS SHIPMENT CONTAINS OIL ***							
** 1 CARGO TANK **							
<p><i>Fast Residue</i> <i>2-3-09</i> <i>AS</i></p>							

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Total Pieces 6,527	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES
Total Ship Weight 50,525 LB			NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding Per

Shipper, Per

Carrier, Per

- ☐ COQ provided to carrier
☐ Quart sample provided to carrier

CARRIER COPY

ExxonMobil Oil Corporation

EPAHQ011000918

Environmental Services

Tractor / Tank Cleaning Division
 2815 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22684

PO #	Customer: JAM	Date: 1-15-09
Tractor	Address: 7010 Mykawa	Time: 4:15 PM
Trailer / Container Number 317	Dropped By: A. Brown	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	Lube Oil			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 0 #2 0 #3 0 #4 0 #5 0
2 Quick Rinse		LEL (<10%) #1 0 #2 0 #3 0 #4 0 #5 0
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 0 #2 0 #3 0 #4 0 #5 0
4 Hot Water Rinse		Toxic Vapor #1 0 #2 0 #3 0 #4 0 #5 0
5 Steam Only (Per Hour)		Signature: JE
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<input checked="" type="checkbox"/>	Detergent Wash + Dry
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<input checked="" type="checkbox"/>	
12 Solvent Wash (Diesel # Hours)	<input checked="" type="checkbox"/>	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: **JE** Date: **1-16-09**

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services
 Container / Tank Cleaning Division
 4904 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22749

PO #	Customer: <u>JAM</u>	Date: <u>1-20-09</u>
Tractor <u>263</u>	Address: <u>7010 RAY KAWA RD Houston</u>	Time: <u>2:10</u>
Trailer / Container Number <u>318</u>	Dropped By: <u>Butch</u>	Need By: <u>900 pm</u>

CONTAINER TYPE: ☒ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Mineral Oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JT</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JT Date 1-20-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Environmental Services

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
ne: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22609

PO #	Customer: <u>J A M.</u>	Date: <u>1/19/09</u>
Tractor <u>283</u>	Address:	Time: <u>15:54</u>
Trailer / Container Number <u>317</u>	Dropped By: <u>MELVIN L. BACKMAN</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Lube oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JT</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
<u>(8)</u> Detergent Wash, Rinse & Dry	<u>/</u>	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JT Date 1-19-09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____


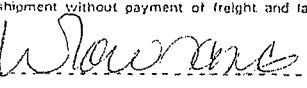
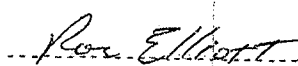
EPAHO011000921

BILL OF LADING

For help in chemical emergency involving spill, leak, fire or exposure, call CHEMTREC 1-800-424-9300. For calls originating outside the continental United States, call 703-527-3887.

SALES ORDER NO.	BILL OF LADING/DELIVERY NO.
106650854	567257724
SHIP DATE	00/00/0000

Shipment cannot be reconsigned or diverted without permission of the shipper

SHIP FROM				Bill of Lading Number : 567257724			
Name : SOPUS Products Address : Houston StthstTer Lubes Subcontractor Southcoast Terminals (HS) 7401 Wallisville Road HOUSTON TX 77020-3555 USA				 8401020567257724			
SHIP TO				CARRIER NAME:			
Name : OIL PATCH BRAZOS VALLEY INC Address : 22614 N HIGHWAY 288B ANGLETON TX 77515-4883 USA				Trailer Number: 12872/UC-U065-CDL 317			
CID #: 11263418				PRO number:			
THIRD PARTY FREIGHT CHARGES BILL TO				SCAC : SHIPMENT: 378216			
Formosa Plastics Corp ORDER # 1046977 2925 Gals of Shell Turbo J32 Del.				Freight Charge Term: (Freight charges are PREPAID unless marked otherwise)		Master Bill of Lading: with attached underlying Bills of Ladings	
Road Pickup				<input type="checkbox"/>			
CUSTOMER ORDER NUMBER	# of PKGS	WEIGHT IN LBS	PALLET SLP	DELIVER BY DATE	DEST NO	PO TYPE NUMBER	DEPT NO.
197654							
QTY	UoM	HM	DESCRIPTION OF ARTICLES	NET LBS	NET GALS	GROSS LBS	GROSS GALS
3000	GAL		500000035 - Shell Turbo Oil J 32 BULK	21606	2998		
			TEMP (F): API:				
Total				21606	2998		
COPY							
Customer has verified that tank has capacity to receive ordered quantity, verified hose hookups & any manifolds are open, accurate and secure, and verified that product unloading from tanker is same product contained in destination tank.							
Customer or Driver Signature if VMI)							
RECEIVED M801 Net GAL 2925 G 51,900 T 30,600 N 21,300							
SHIPPER SIGNATURE / DATE				CARRIER SIGNATURE / PICKUP DATE		CERTIFICATE OF CONFORMITY - SOPUS Products	
This is to certify that above mentioned materials are properly classified, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the DOT. FOR FREIGHT COLLECT SHIPMENTS: If this shipment is to be delivered to the consignee without recourse on the consignor, the consignor shall sign the following statement: The carrier may decline to make delivery of the shipment without payment of freight and lawful charges.				Carrier acknowledges receipt of packages and required placards. Carrier certifies emergency response information was made available and/or carrier has the DOT emergency response guidebook or equivalent documentation in the vehicle. Property described above is received in good order, except as noted.		maintains a quality control system to ensure product supplied meets required specifications. Most of our supply points maintain various ISO certifications, and these can be obtained, as applicable, by calling your Shell sales representative.	
						Property described above is received in good order, except as noted. CUSTOMER SIGNATURE / DATE	

Environmental Services

TANK WASH WORK ORDER

22579

Tank Cleaning Division
 11111 1st St. • Houston, TX 77021
 Tel: (713) 676-1460 • Fax: (713) 676-1676

PO #	Customer: <i>JAM</i>	Date: <i>1-3-9</i>
Tractor <i>262</i>	Address: <i>7010 MYKAWA</i>	Time: <i>4</i>
Trailer / Container Number <i>317</i>	Dropped By: <i>Cubs B</i>	Need By: <i>ASAP</i>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>Lube Oil</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>2</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
5 Steam Only (Per Hour)		Signature: <i>CP</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry <i>✓</i>		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge <i>✓</i>		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: *CP* Date: *1-3-09*

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

Environmental Services
Tank Cleaning Division
Rd. • Houston, TX 77021
(713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22669

Tractor 268	Customer: J. J. Am	Date: 1/14/09
Trailer / Container Number 312	Address:	Time: 7:30
	Dropped By: Milton Pettit	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Lube oil				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 20.7 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 8 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: C R
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: C P Date: 1-14-09

Inspected By: Date:

Print Name: Date:

Signature:

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

From **ExxonMobil Oil Corporation**

Print Date

Sold to Cust: 1006293

Date 01/13/2009	Ship To Cust. 2041500	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container 312
Delivery Note 830390834	Order No. 236095420	Purchase Order 4450695644	Release	F.O.B. Source	Freight COLLECT
				Pro No.	

IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:

S
H
I
P
T
O

MOBIL CHEM COATING
CHEMICAL PRODUCTS DIVISION
P/U BEAUMONT
BEAUMONT TX 77704

Material	Quantity Shipped	Open	Weight	UOM	UOM Desc	H M	Matl. Description
98AR91	44,840		44,840	LB	US pound		MOBILAD PS163 75W-90.BULK.
<p>please note this is a will call order customer to p/u 1/13/09 @5AM any problems call janice martin@409-839-1745 GEMS Order# 9159535 customer contact is kim woods@409-839-1265 s doucette x 6237</p> <p>please note this is a will call order customer to p/u /07@5AM any problems call janice martin@409-839-1745 GEMS Order# customer contact is kim woods@409-839-1265 d ard 3312</p> <p>*** THIS SHIPMENT CONTAINS OIL *** ** 1 CARGO TANK **</p> <p>RESIDUE: "LAST CONTAINED"</p> <p><i>OIL - M1 Pump</i> Signature: <i>A Smith</i> Date: <u>1-13-09</u></p>							

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Total Pieces 44,840	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.	RECEIVED ABOVE PRODUCTS AND QUANTITIES
Total Ship Weight 44,840 LB			NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property. The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____

ExxonMobil Oil Corporation

Shipper, Per

Carrier, Per

<input type="checkbox"/> COQ provided to carrier
<input type="checkbox"/> Quart sample provided to carrier

CARRIER COPY

EPAHQ0011000925

Environmental Services
Cleaning Division
Houston, TX 77021
1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22359

Customer:	<u>JAM</u>	Date:	<u>1/12/99</u>
Address:		Time:	<u>11:09</u>
Container Number	<u>14</u>	Dropped By:	<u>O. Brown</u>
		Need By:	

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Internal</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>8/0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>2</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JT</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	<u>ASAP.</u>
9 Caustic Wash & Dry		<u>Front End</u>
10 Caustic Wash, Rinse & Dry		<u>Damaged</u>
11 Waste Water Surcharge	<u>/</u>	<u>5A</u>
12 Solvent Wash (Diesel # Hours)	<u>/</u>	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JT Date 1-12-99

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

EPAHO011000926

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

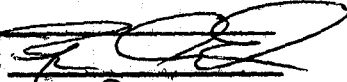
Page: 1/1

Print Date: 01/08/2009 19:37:33

From **ExxonMobil Oil Corporation**

Sold to Cust: 1001113

Date 01/08/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	Trailer/Container No. 314
Delivery Note 830348125	Order No. 236083845	Purchase Order 197267	Release	F.O.B. Source	Freight COLLECT
IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:				S H I P T O	J.A.M. DISTRIBUTING 7010 MYKAWA ROAD HOUSTON TX 77033

Material	Quantity		Weight	UOM	UOM Desc	H M	Matl. Description
	Shipped	Open					
98FT88	6,488		48,751	NG	Net Gallons		MOBILGARD M330,BULK.
SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS. 126189 *** THIS SHIPMENT CONTAINS OIL *** ** 1 CARGO TANK **							
RESIDUE: "LAST CONTAINED" Signature:  Date: 1-10-9							

The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.

This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.

If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.

The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.

Pieces

FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.

RECEIVED ABOVE PRODUCTS AND QUANTITIES

NOTE: Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property.

The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding

Per

Shipper, Per

Carrier, Per

☐ COQ provided to carrier

☐ Quart sample provided to carrier

CUSTOMER COPY

EPAHQ0011000927

TANK WASH WORK ORDER

22353

Services

Division
TX 77021
Fax: (713) 676-1676

Customer: JAM

Address: _____

Per Number _____
Dropped By: Halsey Simon

ERTYPE: ☐ TOTE BIN
☐ ROLL TARP BOX

Part # _____
Sub # 01

4 _____
5 _____

CLEANING CODES

1 Air Dry

2 Quick Rinse

3 Cold Water Rinse

4 Hot Water Rinse

5 Steam Only (Per Hour)

6 Steam & Dry

7 Rinse, Steam & Dry

8 Detergent Wash, Rinse & Dry

9 Caustic Wash & Dry

10 Caustic Wash (Diesel # Hours)

11 Waste Wash (Stripper)

12 Solvent Wash (Stripper)

13 Exterior Tractor Wash

14 Exterior Trailer Wash (w/o Internal)

15 Exterior Trailer Wash (with Internal)

16 Exterior Acid Brite Wash

17 Hand Labor (# Men / # Hours)

18 Hydroblaster (# Hours)

19 Solvent Wash (Green Stripper)

20 Passivation

21 Hose Cleaning

Pump Cleaning

WORK PERFORMED

☐ ISO CONTAINER
☐ FRAC TANK

Heel - Hazardous

☐ POLY TANK

Heel - Non-Haz

☐ DRY BULK
☐ VACUUM TRUCK

Drum / Rolloff

Oxygen (19.5% - 23.5%) #1 20 #2 _____ #3 _____ #4 _____ #5 _____

LEL (<10%) #1 20 #2 _____ #3 _____ #4 _____ #5 _____

CO2 (<35 ppm) #1 20 #2 _____ #3 _____ #4 _____ #5 _____

Toxic Vapor

Signature: JR

Stripper Usage:

Comments:

Authorized Additional Services:

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Cleaned By: JR

Inspected By: _____

Date: 1-12-09

Date: _____

Print Name: _____

Signature: _____

Date: _____

straight bill of lading

ORIGINAL - NOT NEGOTIABLE

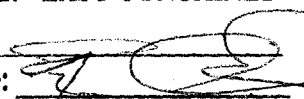
From **ExxonMobil Oil Corporation**

Date 01/07/2009	Ship To Cust. 2021478	SCAC No. WCB1	Carrier WILLCALL BULK	Shipping Origin BEAUMONT B&P PLANT	
Delivery Note 830335050		Order No. 236043662	Purchase Order 197178	Release	F.O.B. Source
				Freight COLLECT	

IF PREPAID, RENDER FREIGHT BILL IN DUPLICATE TO PERMANENT POST OFFICE ADDRESS OF SHIPPER:

**S
H
I
P

T
O**
J.A.M. DISTRIBUTING
7010 MYKAWA ROAD
HOUSTON TX 77033

Material	Quantity		Weight	UOM	UOM Desc	H M	Matl. Description
	Shipped	Open					
981218	6,512		50,409	NG	Net Gallons		MOBILGARD 570.BULK.
<p>SHIP ENTIRE LOAD ON PALLETS.CERTIFICATE OF ANALYSIS REQ FOR ALL BULK SHIPMENTS.</p> <p>0126146</p> <p>*** THIS SHIPMENT CONTAINS OIL ***</p> <p>** 1 CARGO TANK **</p>							
<p>RESIDUE: "LAST CONTAINED"</p> <p>Signature: </p> <p>Date: <u>1-10-9</u></p>							
<p>The carrier named hereon, by signing this bill of lading acknowledges receipt from ExxonMobil Oil Corporation the property described hereon, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned, and destined as indicated hereon, which said carrier (the word carrier being understood throughout this bill of lading as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the contract.</p> <p>This bill of lading does not in and of itself constitute a contract of carriage. If a prepaid shipment, this bill of lading is subject to the contract in effect between carrier and ExxonMobil's third party logistics provider. If a freight collect shipment, this bill of lading is a receipt of goods only and a carrier shall have no recourse on consignor for payment of freight and other charges for such freight collect shipments.</p> <p>If bulk truck: The carrier certifies that the cargo tank supplied for this shipment is a proper container for the transportation of this commodity as described by the shipper.</p> <p>The fiber boxes used for this shipment conform to the specifications set forth in the box maker's certificate thereon, and all other requirements of the Uniform and National Motor Freight Classifications.</p>							

Total Pieces 6,512	FOR HELP IN EMERGENCIES INVOLVING SPILL, LEAK, FIRE OR EXPOSURE CALL TOLL FREE (800)424-9300 DAY OR NIGHT.	<small>This is to certify that the above named materials are properly classified, described, packaged, marked and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</small>	RECEIVED ABOVE PRODUCTS AND QUANTITIES		
Total Ship Weight 50,409 LB			<small>NOTE-Where the rate is dependent on value, shippers are required to state specifically in writing the agreed or declared value of property.</small> The agreed or declared value of the property is hereby specifically stated by the shipper to be not exceeding _____ Per _____		
ExxonMobil Oil Corporation		Shipper, Per _____	Carrier, Per _____	<input type="checkbox"/> COQ provided to carrier <input type="checkbox"/> Quart sample provided to carrier	CUSTOMER COPY

EPAHQ011000929

Environmental Services

TANK WASH WORK ORDER

er / Tank Cleaning Division
Griggs Rd. • Houston, TX 77021
one: (713) 676-1460 • Fax: (713) 676-1676

22694

PO #	Customer: <u>JAM</u>	Date: <u>1/15/09</u>
Tractor <u>2601</u>	Address:	Time: <u>9:42</u>
Trailer / Container Number <u>312</u>	Dropped By: <u>Butch Harris</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Line 1</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>26.01</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>ST</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)	✓	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)	✓	
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: ST Date 1-15-09

Inspected By: _____ Date _____

Print Name: _____ Date _____

Signature: _____

EPAHO011000930

Environmental Services

Tank Cleaning Division
 1301 S. Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22681

Tractor	Customer: <u>J Am</u>	Date: <u>1-14-09</u>
Trailer / Container Number: <u>218</u>	Address:	Time: <u>11:53</u>
	Dropped By: <u>Anthony Smith</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Lube oil</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>80%</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>1</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>1</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>SR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>X</u> ✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>✓</u>	
12 Solvent Wash (Diesel # Hours)	<u>✓</u>	
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: SR Date: 1/15/09
 Inspected By: _____ Date: _____

Print Name: Anthony Smith Date: 1-14-09

Signature: AS

EPAH0011000931

CES Environmental Services
 Cleaning Division
 Houston, TX 77021
 460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

22578

Customer: <i>JAM</i>	Date: <i>1-3-9</i>
Address: <i>7010 MYRAVUE</i>	Time: <i>10:30</i>
Trailer / Container Number <i>313</i>	Dropped By: <i>Curly B</i>
	Need By: <i>ASAP</i>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>Lube Oil</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>100</i> #2 <i>100</i> #3 <i>100</i> #4 <i>100</i> #5 <i>100</i>
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
5 Steam Only (Per Hour)		Signature: <i>ST</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: *ST* Date: *1-3-09*

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services
Cleaning Division
Houston, TX 77021
460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25801

Customer:	LEE'S	Date:	5/10/09
Address:		Time:	8:30pm
Trailer / Container Number	Dropped By: Scott J. Lee	Need By:	

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 Fatty Acid				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>78</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>✓</u> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>✓</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>✓</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: _____
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: _____
8 Detergent Wash, Rinse & Dry	✓	
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JP

Date: 5/10/09

Inspected By: _____

Date: _____

Print Name: _____

Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000933

UM is an acknowledgement that a bill of lading has been issued
Original Bill of Lading, nor a copy or duplicate, covering the property
and is intended solely for filing or record

Shipper's No. 70222-1	Page 1 OF 1
Agent's No.	Date 05/06/09

Subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
Georgia-Pacific Chemicals LLC (Shipper/Consignor) AT CROSSETT, AR

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 1079-01 CHAMPION TECHNOLOGIES	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL
SHIP TO ADDRESS: 3130 FM 521		Received --- \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: FRESNO, TX 77545 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges Advanced \$
CAR INITIALS AND NUMBER:	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 0609 FORMULATED TALL OIL PTBP-0609	GROSS TARE NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC (Signature of Consignor)
DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEASED TO CONSIGNEE

SPECIAL INSTRUCTIONS	
PO# 77468 Deliver On 05/07/2009 1 PM LOAD 45,000 LBS. SEND COA W/SHIPMENT. <i>5/7/09</i> <i>1000055116</i>	

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PINK HORIZ STRIPE OR PROD SPECIFIC TAG
------------------------------------------------	-----------------------------------------	------------------------------------------------------------------------

Georgia-Pacific Chemicals LLC Per 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
---------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------

APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier:	Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

4 IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000934

Environmental Services

TANK WASH WORK ORDER

Truck Cleaning Division
 11111 Briggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25774

PO #	Customer: <u>LEE'S TRUCKING</u>	Date: <u>5-12-09</u>
Tractor: <u>2430</u>	Address: <u>EIDORADO, AL</u>	Time:
Trailer / Container Number: <u>965</u>	Dropped By: <u>Willie Pinter</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☐ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Tail Oil</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ² (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JR Date: 5-12-9

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

THIS SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in Carbon and retained by the Agent.

Shipper's No. 70191-1	Page 1 OF 1
Agent's No.	

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading	Date 05/10/09
From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR	

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 2067-01 LAMBERTI USA, INC. (Consignee)	If charges are prepaid, write or stamp here, "Prepaid" PREPAID
SHIP TO ADDRESS: US 59 @ COUNTY RD 212	Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: HUNGERFORD, TX 77448 USA	Agent or Cashier
ROUTE:	Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	Charges Advanced \$
CAR INITIALS AND NUMBER: 2430/965	SEAL NUMBER(S):
	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	HOT Elevated temperature liquid, n.o.s.; 9; UN 3257; III XTOL 656 MIXED TALL OIL ACIDS PTBP-0656	GROSS 76500 TARE 32060 NET 44440 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.
DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEASED TO CONSIGNEE
		Georgia-Pacific Chemicals LLC (Signature of Consignor)

SPECIAL INSTRUCTIONS	
PO# 4500269369 Deliver On 05/11/2009 NOON Load 45,000 lbs. COA to accompany shipment. XTOL 656 -PRODUCT CODE "M099701-000000"	

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG, OR BAG
------------------------------------------------	-----------------------------------------	---------------------------------------------------------------------

Georgia-Pacific Chemicals LLC Per <i>Two Muhl</i> 5-10-09 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPER MILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
---------------------------------------------------------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------

APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier: <i>LEE'S</i>	Per <i>[Signature]</i>

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 70

2

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000936

Environmental Services

Cleaning Division
 10000 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25896

PO #	Customer: <i>Lee's</i>	Date: <i>5-19-09</i>
Tractor <i>2610</i>	Address:	Time:
Trailer / Container Number <i>2285</i>	Dropped By: <i>FRANK DAVIS</i>	Need By: <i>ASAP</i>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>CLAY BINDER TAILOR 6450</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 <i>0</i> #3 <i>0</i> #4 <i>0</i> #5 <i>0</i>
5 Steam Only (Per Hour)		Signature <i>JR</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry <i>✓</i>		
9 Caustic Wash & Dry <i>✓</i>		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge <i>✓</i>		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: *J.R.* Date: *5-19-09*

Inspected By: _____ Date: _____

Print Name: *FRANK* Date: *5/19/09*

ORIGINAL ORDER must be legibly filled in, in ink, in indelible Pencil, or in
and retained by the Agent.


Shipper's No. 04406-1	Page 1 OF 1
Agent's No.	Date 05/16/09

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
From: **Georgia-Pacific Chemicals LLC** (Shipper/Consignor) **AT** **CROSSETT, AR**


The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 3213-01 MOSAIC POTASH CARLSBAD INC	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPAID
SHIP TO ADDRESS: 1361 POTASH MINES ROAD		Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: CARLSBAD, NM 88220 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges Advanced \$
CAR INITIALS AND NUMBER: 2010/3285	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** TALON 6450 MINING DEPRESSANT RUMN-6450	GROSS 77540 TARE 32360 NET 45180 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.
DESCRIPTION FOR FREIGHT RATING PURPOSES:		Georgia-Pacific Chemicals LLC (Signature of Consignor)

SPECIAL INSTRUCTIONS	
PO# N17158 Deliver On 05/18/2009 7 AM Ship 45,000 lbs To be unloaded with plant compressed air 	
THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.	

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG, OR BAG
Georgia-Pacific Chemicals LLC Per 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD CROSSETT, AR 71635 870-567-7200	

APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier: LEE'S	Per: 

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

2

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000938

Environmental Services

Tank Cleaning Division
 11000 Gs Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25400

#	Customer: <u>Lee's Trucking</u>	Date: <u>3-23-9</u>
Tractor <u>2880</u>	Address: <u>Eldorado AR</u>	Time: <u>1645</u>
Trailer / Container Number <u>1075</u>	Dropped By: <u>Michael Gayden</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAG TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>B99.9</u>			
2 <u>Fuel Add</u>				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>0</u> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <u>JPR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<u>Dry odor free</u>
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JPR Date 3-23-9

Inspected By: _____ Date _____

Print Name: Michael Gayden Date 3-23-9

Signature: Michael Gayden

STRAIGHT BILL OF LADING
ORIGINAL - NOT NEGOTIABLE

BOL# 1010

88374

CARRIER: Lee's Trucking

DATE: 3-22-09

Shipper:

Pinnacle Biofuels, Inc.
117 Mac McGoogan Drive
Crossett AR 71635

Consignee Information:

RTW Terminal
1005 Anchor Road
Brownsville, TX 78521

The property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the work carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

DESCRIPTION		GALLONS
1 T/T	B99.9	6,351
		Gross 79880
		Net 33260
		Tare 46620
<i>Gracie Garcia 3/23/09</i>		
SHIPPER: Pinnacle Biofuels, Inc.		CARRIER: Lee's Trucking
SIGNATURE: <i>Brad Nelson</i>		SIGNATURE: <i>Michael Hayden</i>
DATE: <u>3-22-09</u>		DATE: <u>3-22-9</u>

CES Environmental Services

Tank Cleaning Division
 11111 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25412

PO # 1015	Customer: Lee's TRUCKING	Date: 3-25-09
Tractor 2380	Address:	Time: 11:15
Trailer / Container Number 1165	Dropped By: Lloyd Lull	Need By: 7:00 AM

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	B 99.9 BIOFUELS			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 101 #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 6 #2 #3 #4 #5
3 Cold Water Rinse		CO2 (<35 ppm) #1 6 #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 0 #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: AL
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: AL Date 3-26-09

Inspected By: Date

Print Name: Date

Signature:

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

EPAHO011000941

Environmental Services

TANK WASH WORK ORDER

Environmental Services
 Tank Cleaning Division
 Griggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

25439

PO #	Customer: <u>LEE'S</u>	Date: <u>3/25/09</u>
Tractor <u>2920</u>	Address:	Time: <u>8:37</u>
Trailer / Container Number <u>1165</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>1000 Diesel</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>CP</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<u>A.S.A.P.</u>
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date: 3-25-09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date: _____

Signature: _____

EPAHO011000942

STRAIGHT BILL OF LADING
ORIGINAL – NOT NEGOTIABLE

BOL# 1012

CARRIER: Lee's Trucking

DATE: 3-23-09

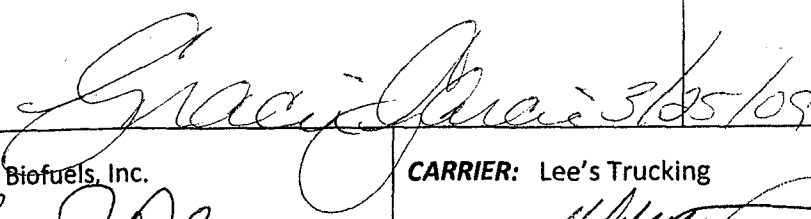
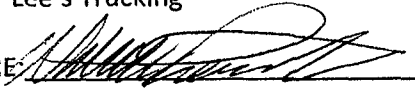


Shipper:

Pinnacle Biofuels, Inc.
117 Mac McGoogan Drive
Crossett AR 71635

Consignee Information:

RTW Terminal
1005 Anchor Road
Brownsville, TX 78521

The property described below, in apparent good order, except as noted (contents and condition of packages unknown), marked, consigned, and destined as indicated below, which said carrier (the work carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract) agrees to carry to its usual place of delivery at said destination, if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed, as to each carrier of all or any said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) in Official, Southern, Western and Illinois Freight Classification in effect on the date hereof, if this is a rail or a rail-water shipment, or (2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment. Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading, including those on the back thereof, set forth in the classification or tariff which governs the transportation of this shipment, and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

DESCRIPTION		GALLONS
1 T/T	B99.9	6,403
 SHIPPER: Pinnacle Biofuels, Inc.		 CARRIER: Lee's Trucking
SIGNATURE: 		SIGNATURE: 
DATE: 3-23-09		DATE: 3-23-09

Environmental Services

Trailer / Tank Cleaning Division
1904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

25330

PO #	Customer: <u>LEE'S</u>	Date: <u>3/19/09</u>
Tractor <u>2750</u>	Address:	Time: <u>12:35pm</u>
Trailer / Container Number <u>2695</u>	Dropped By: <u>[Signature]</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Empty Acid</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JE</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry	<u>/</u>	<u>Waiting</u>
9 Caustic Wash & Dry		<u>1. waiting</u>
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	<u>/</u>	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Close Cleaning		
Pump Cleaning		

Cleaned By: JE Date 3-19-9

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

EPAHO011000944

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record

Shipper's No. 69822-1	Page 1 OF 1
Agent's No.	

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
From: **Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR** Date **03/18/09**

The property described below has been recieved by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 1079-01 CHAMPION TECHNOLOGIES	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL
SHIP TO ADDRESS: 3130 FM 521		Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: FRESNO, TX 77545 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges Advanced \$
CAR INITIALS AND NUMBER:	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 0609 FORMULATED TALL OIL PTBP-0609	GROSS TARE NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initiated the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.
DESCRIPTION FOR FREIGHT RATING PURPOSES:		Georgia-Pacific Chemicals LLC (Signature of Consignor)
RAIL CAR TRIP LEASED TO CONSIGNEE		

SPECIAL INSTRUCTIONS

PO# 75190
Deliver On 03/19/2009 8 am
LOAD 45,000 LBS.
SEND COA W/SHIPMENT.

Charles Bandman

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED
EMERGENCY RESPONSE INFORMATION ATTACHED
OSHA TAG(S)/LABEL(S) APPLIED
PINK HORIZ STRIPE OR PROD SPECIFIC TAG

Georgia-Pacific Chemicals LLC Per 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
-------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------

APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier:	Per
----------	-----

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

4

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000945

CES Environmental Services
Cleaning Division
Houston, TX 77021
713-676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

2533

#	Customer: <u>LCES</u>	Date: <u>3-19</u>
Tractor <u>2650</u>	Address:	Time:
Trailer / Container Number <u>1175</u>	Dropped By: <u>SCOTT GLOVER</u>	Need By: <u>15:00</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Choline Chloride</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: _____
6 Steam & Dry		Stripper Usage: _____
7 Rinse, Steam & Dry		Comments: <u>clean - Dry - order Free</u>
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services: _____
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: TL Date: 3-19-94

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Environmental Services

Tank Cleaning Division
 Riggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

17198

PO #	Customer: <u>LEE'S</u>	Date: <u>3/18/09</u>
Tractor: <u>2610</u>	Address: <u>El Dorado AR</u>	Time:
Trailer/ Container Number: <u>2285</u>	Dropped By: <u>FRANK DAVIS</u>	Need By: <u>ASAP</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<u>Nitric Acid.</u>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>22.7</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>1</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse	✓	CO ₂ (<35 ppm) #1 <u>1</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>1</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry	✓	Comments:
8 Detergent Wash, Rinse & Dry		<u>VACUUM TEST</u>
9 Caustic Wash & Dry		<u>INTERNAL & EXTERNAL</u>
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning	<u>1-2"</u>	
Pump Cleaning		

Cleaned By: JR Date: 3/18/09

Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: FRANK DAVIS Date: 3/18/09

Signature: Frank Davis

EPAHO011000947

SHIPPING ORDER

must be legibly filled in, in ink, in Indelible Pencil or in Carbon, and retained by the Agent.

RECEIVE, subject to the classifications and tariffs in effect on the date of the issue of this Shipping Order.

E.D.C.-73 (REV. 2-94)

NEW ORDER

FROM

EL DORADO CHEMICAL COMPANY
EL DORADO, ARKANSAS

SHIPPER'S NO.

351128

CUSTOMER P.O. NUMBER

3/13/09

61548

TRUCK/CAR OR VEHICLE
INITIALS AND NO.

NOTE: IF CHARGES ARE TO BE PREPAID, WRITE "PPD" ON
LEFT OF LINE BELOW TO INDICATE "TO BE PREPAID"

DATE SHIPPED

3/14/09

182388

PREPAID OR COLLECT ROUTING

COL

Lee trucking p/u 3pm

TO INSURE PAYMENT
THIS SHIPPER'S NUMBER
MUST BE SHOWN ON
FREIGHT BILL

Your Statement must show Pro.
No. and El Dorado's Shipper's
No. opposite each amount; also
statement total.

Send Original Prepaid
Freight Bill directly to

El Dorado Chemical Co.
P.O. Box 231
EL DORADO, ARKANSAS 71730

SOLD

CHEMICAL INTERCHANGE
2932 S BRENTWOOD BLVD.

28514

The property described below in apparent good order, except as noted, contents and condition of contents of packages unknown, marked consigned and destined as indicated below, which said carrier, the word carrier being understood throughout this contract as meaning any person or corporation in possession of the property under the contract, agrees to carry to its usual place of delivery at said destination if on its route, otherwise to deliver to another carrier on the route to said destination. It is mutually agreed as to each carrier of all or any of said property over all or any portion of said route to destination and as to each party at any time interested in all or any of said property that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Domestic Freight Bill of Lading set forth in Uniform Freight Classification in effect on the date hereof, if this is a rail or rail-water shipment, or 2) in the applicable motor carrier classification or tariff if this is a motor carrier shipment.
Shipper hereby certifies that he is familiar with all the terms and conditions of the said bill of lading including those on the back thereof set forth in the classification or tariff which govern the transportation of this shipment and the said terms and conditions are hereby agreed to by the shipper and accepted for himself and his assigns.

TO

SAINT LOUIS

NO 63144

SHIP TO

UNIVAR

311 LAKE AVE

SHIP TO

ADDRESS

TV 79762

SHIP TO AND DESTINATION (MAIL OR STREET ADDRESS OF CONSIGNEE FOR PURPOSES OF NOTIFICATION ONLY)

HM	DESCRIPTION OF ARTICLES, SPECIAL MARKS** AND EXCEPTIONS	QUANTITY	CONTAINER
X	RQ. UN2031, NITRIC ACID 8. PGII, (OTHER THAN RED FUMING, 70% OR LESS NITRIC ACID) 70677-01.2 W/Bleach/Soch	25.000	NT 1-TL
	S/N OR LOT NO.	ASSAY 67.50	%
	* WEIGHT (SUB TO CORR)	GROSS 79540	TARE 32220
		NET 47320	

NOTE FREIGHT
TERMS ABOVE

THE DESCRIPTION AND WEIGHT
INDICATED ON THIS BILL OF
LADING ARE CORRECT SUBJECT
TO VERIFICATION BY THE
WESTERN WEIGHING AND
INSPECTION BUREAU ACCORDING
TO AGREEMENT.

☐ CAR LOADED TO FULL
VISIBLE CAPACITY ☐ CAR LOADED
SHELL FULL

This is to certify that the above named materials are properly classified, described, packaged, marked and labeled and are in proper condition for transportation, according to the applicable regulations of the Department of Transportation.

Shipper's imprint in lieu of stamp, not a part of bill of lading approved by the Interstate Commerce Commission.

El Dorado Chemical Co.

Shipper, Per

WRITTEN SIGNATURE ONLY

Agent, Per

Permanent post-office address of shipper P.O. BOX 231, EL DORADO, AR 71730

SHIP ON

3/14/09
12 DED NITRIC ACID (57%)
BLEACHED

70677

01

"Offered"

FOR CHEMICAL EMERGENCY

SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT
CALL CHEMTREC — DAY OR NIGHT 1-800-424-9300

2

Environmental Services

Tank Cleaning Division
 3 Rd. • Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

24225

#	Customer: <u>LEE'S</u>	Date: <u>3/9/09</u>
Tractor <u>2940</u>	Address:	Time:
Trailer / Container Number <u>1105</u>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>IIA</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% - 23.5%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry	✓	Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge	✓	
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JR Date: 3/9/09
 Inspected By: _____ Date: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.
 CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Print Name: Samuel... Date: 3/9/09

Bastrop Tank Wash

9029 Coulter Dr.

Bastrop, LA 71220

(318) 281-5050 (877) 281-TANK

FAX : (318) 281-6030

Tank Wash Ticket # **14714**

Wash Date: 2/11/09

Product Ship Date: 2/11/09

Bill of Lading No.: 0356751

Truck # 2000 Trailer # 2000

Time in 7:30am Time out 9:15am

Customer: 1-800-2-2-2-2-2-2 Driver: 1-800-2-2-2-2-2-2

Last Product: 1-800-2-2-2-2-2-2 Placard # NK

Customer represents that the description of the last product contained is accurate in all material respects and authorizes Bastrop Tank Wash, Inc. to perform the cleaning services indicated hereon:

MSD Sheet is required

Signature of Driver agent

☒ Tank ☐ Pump ☐ Hoses ☐ Tank Ext. ☐ Tractor Ext. ☐ Other

Procedure	Cost	Dry	Total
Air Dry only	45.00		
Steam Clean	135.00	10.00	
Cold Wash	90.00	10.00	
Hot Wash	130.00	10.00	
Detergent Wash	140.00	10.00	
Caustic Wash	160.00	10.00	160.00
Presolve	185.00	10.00	
External Truck Wash	35.00		
External Tank wash	40.00		
External Dry Box	45.00		
Combo	75.00		
Pump	15.00		
Hoses # 4	8.00		32.00
Hand labor per hr	45.00		
Waste Water Charge	20.00		20.00
Call out fees after hours	80.00		
Fuel Surcharge	10.00		10.00
DOW Prep	35.00		
Additional Charges			
discription			
Total			222.00

Tank Entry Permit

Oxygen (19.5% - 23.5%) #1 #2 #3

LEL (<10%)

CO2 (<35 ppm)

H2S

Tech Signature

Barrel Condition : ☐ Pits ☐ Stains ☐ Dents

Wash Tech :

Heel Removal : < 5 gallons Free

15.00 per gallon over

Heel Disposal : Barrel # Tote #

Dispatch will be called if heel is over 5 gallons, if over 25 gallons, tank will need to be sent back to be drained

The undersigned has examined the interior and exterior of the tank vessel as well as all component parts and is satisfied that the same has been properly washed and dried.

Signature of driver agent

T-Check Fleet One Check

ComCheck Check #

TANK WASH WORK ORDER

24217

CES
 Division
 Houston, TX 77021
 (713) 676-1460 • Fax: (713) 676-1676

PO #	Customer: <i>LEE'S</i>	Date: <i>3/6/09</i>
Tractor	Address:	Time: <i>14:00</i>
Trailer / Container Number <i>965</i>	Dropped By:	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1	<i>Calcium Bromide</i>			
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <i>0</i> #2 #3 #4 #5
2 Quick Rinse		LEL (<10%) #1 <i>0</i> #2 #3 #4 #5
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <i>0</i> #2 #3 #4 #5
4 Hot Water Rinse		Toxic Vapor #1 <i>0</i> #2 #3 #4 #5
5 Steam Only (Per Hour)		Signature: <i>JL</i>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		<i>Cold</i>
9 Caustic Wash & Dry		<i>Flush</i>
10 Caustic Wash, Rinse & Dry		<i>Flush</i>
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Date *3-6-9*

Date

Print Name: Date

Signature:

EPAHO011000951

BILL OF LADING / SHORT FORM ORIGINAL / NON-NEGOTIABLE

CAROUSEL SPEC.PRDTs	Consignee: Halliburton Energy Services	Shippers Number
9011 E Alameda St.	Fourchon, LA	0309-1
Houston, TX 77054	182 N. Doucet Dr.	
	Golden Meadow, LA 70357	
Vendor No. 1190534		

Ship Via	Date Shipped	Freight Charges PREPAID	Cust. Purchase Order# PO# 14TLCaBrMar Consignee Phone# 985-396-2681	One Copy of the BOL must be attached to Freight Bill
Tank # 965				

<p>This is to certify that the hereinafter named materials are properly classified, described, packaged, marked, and labeled, and are in proper condition for transportation according to the applicable regulations of the Department of Transportation.</p> <p>SIGNATURE _____</p> <p>FOR FREIGHT COLLECT SHIPMENTS: If this shipment is to be delivered to the consignee without resource on the consignor, then the consignor shall sign the following statement:</p> <p>The carrier may decline to make delivery of this shipment without payment of freight and all other lawful charges.</p> <p>SIGNATURE _____</p>	<p>RECEIVED, subject to individually determined rates or contracts that have been agreed upon in writing between the carrier and shipper. If applicable, otherwise to the rates, classifications, and rules that have been established by the carrier and are available to the shipper, on request.</p> <p>The property described below, in apparent good order, except as noted (contents and conditions of contents of packages unknown) marked, consigned, and destined as shown above, which said carrier agrees to carry to destination, if on its route, or otherwise to deliver to another carrier on the route to destination, it is mutually agreed, as to each carrier of all or any of said property over all or any portion of said route to destination, and as to each party at any time interested in all of any of said property, that every service to be performed hereunder shall be subject to all the terms and conditions of the Uniform Bill of Lading set forth in the National Motor Freight Classification 100-X and successive issues. The shipper hereby certifies that they are familiar with all the terms and conditions of the said bill of lading and the said terms and conditions are hereby agreed to by the shipper and accepted for themselves and their assigns.</p>
----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

No. Pcs.	H M ()	Material	Weight (Sub to Corrections) Total Quantity (LBS.)	Density (lbs/gal)	Volume Total Quantity (BBLs.)	Class
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1

KLEARBROM 14.2 Calcium Bromide Fluid
CALCIUM BROMIDE, IN BULK

85

Batch No. CSP-QY1108-B

TOP SEAL: AB-206776

BOTTOM SEAL: AB-206776

SPECIAL INSTRUCTIONS:

Driver MUST have certificate of analysis for delivery. DRIVER MUST have a light and heavy weight ticket upon arrival to customer.

FOR CHEMICAL EMERGENCY - SPILL, LEAK, FIRE, EXPOSURE, OR ACCIDENT CALL: CHEMTEL (800) 255-3924

<p>OFFERED CARRIER PLACARDS (1000 lbs. / 454 KG or More)</p> <p><input type="checkbox"/> Oxidizer <input type="checkbox"/> Corrosive <input type="checkbox"/> Dangerous <input type="checkbox"/> Flammable</p> <p>DRIVER INITIAL <u>mb</u></p>	<p>I CERTIFY THAT DOT EMERGENCY RESPONSE GUIDES FOR THE ABOVE MATERIALS WILL ACCOMPANY SHIPMENT.</p> <p>DRIVER INITIAL <u>mb</u></p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------

Shipper: CAROUSEL SPECIALLY PRODUCTS	Carrier: <u>lee's</u>	Date: <u>03-05-09</u>
Per: <u>Javier Muñoz</u>	Per: <u>Mike GORD</u>	

(Receiver →) Al

EPAHQ011000952

Environmental Services

Container / Tank Cleaning Division
4904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26387

PO # <u>70004</u>	Customer: <u>LEE'S</u>	Date: <u>2/10/09</u>
Tractor <u>2650</u>	Address:	Time:
Trailer / Container Number <u>2165</u>	Dropped By: <u>Scott Alon</u>	Need By: <u>Tonite</u>

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Fatty Acid</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5%-23.5%) #1 <u>21.0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
3 Cold Water Rinse		CO ₂ (<35 ppm) #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u> </u> #3 <u> </u> #4 <u> </u> #5 <u> </u>
5 Steam Only (Per Hour)		Signature: <u>JL</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: JL Date 2-10-09

Inspected By: _____ Date _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues or moisture. Final inspection of the equipment remains the responsibility of the customer, and the release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claim from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for damages or losses of equipment and/or materials left in their yard.

Print Name: _____ Date _____

Signature: _____

THIS MEMORANDUM is an acknowledgement that a bill of lading has been issued and is not the Original Bill of Lading, nor a copy or duplicate, covering the property named herein, and is intended solely for filing or record

Shipper's No. 69280-1	Page 1 OF 1
Agent's No.	

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR	Date 02/09/09
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 1079-01 CHAMPION TECHNOLOGIES	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL
------------------------------------------	-------------	---------------------------------------------------------------------------------

SHIP TO ADDRESS: 3130 FM 521	Received \$ to apply in prepayment of the charges on the property described hereon
----------------------------------------	---------------------------------------------------------------------------------------

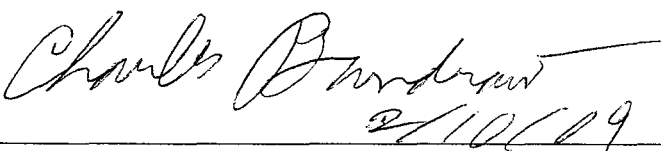
CITY, STATE, ZIP: FRESNO, TX 77545 USA	Agent or Cashier
--------------------------------------------------	------------------

ROUTE:	Per (The signature here acknowledges only the amount prepaid)
--------	------------------------------------------------------------------

DELIVERING CARRIER: LEE'S TRUCKING COMPANY	Charges Advanced \$
------------------------------------------------------	---------------------

DESTINATION:	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"
CAR INITIALS AND NUMBER:	SEAL NUMBER(S):

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	** NON-REGULATED ** XTOL 0609 FORMULATED TALL OIL PTBP-0609	GROSS TARE NET All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below. Georgia-Pacific Chemicals LLC (Signature of Consignor)
DESCRIPTION FOR FREIGHT RATING PURPOSES:		RAIL CAR TRIP LEASED TO CONSIGNEE

SPECIAL INSTRUCTIONS	
PO# 72980 Deliver On 02/10/2009 1 pm LOAD 45,000 LBS. SEND COA W/SHIPMENT.  2/10/09	
THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.	

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PINK HORIZ STRIPE OR PROD SPECIFIC TAG
------------------------------------------------	-----------------------------------------	------------------------------------------------------------------------

Georgia-Pacific Chemicals LLC Per 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
-------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------

APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier:	Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

4 IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHQ011000954

Environmental Services

TANK WASH WORK ORDER

Trailer / Tank Cleaning Division
904 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

22799

PO #	Customer: <u>LEE'S</u>	Date: <u>1/30/09</u>
Tractor <u>2930</u>	Address:	Time: <u>12:41</u>
Trailer / Container Number <u>2115</u>	Dropped By: <u>Russell K</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>Fatty Acid</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>21.0</u> #2 _____ #3 _____ #4 _____ #5 _____
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 _____ #3 _____ #4 _____ #5 _____
5 Steam Only (Per Hour)		Signature: <u>CP</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: CP Date: 1-30-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

ORDER must be legibly filled in, in ink, in indelible Pencil, or in the Agent.

Shipper's No. 68891-1

Page

1 OF 1

Agent's No.

Classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading
Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR

Date

01/28/09

Below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property on said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor shipment, in the National Motor Freight Classification.

CHAMPION TECHNOLOGIES

(Consignee)

If charges are prepaid, write or stamp here, "Prepaid."

PREPD & BILL

521

NO, TX 77545 USA

Received \$
to apply in prepayment of the charges on the property described hereon

Agent or Cashier

Per
(The signature here acknowledges only the amount prepaid)

Charges
Advanced \$

*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

CARRIER:

LEES TRUCKING COMPANY

DESTINATION:

SEAL NUMBER(S):

30/ 2115

NO. AND TYPE
OF PACKAGES

1 TT

BASIC DESCRIPTION AND ASSOCIATED INFORMATION

** NON-REGULATED **

(XTOL 0609 FORMULATED TALL OIL
PTBP-0609

Charles Bandraw

WEIGHT*

Subject to Correction

GROSS 78140

TARE 34020

NET 44120

All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.

Georgia-Pacific Chemicals LLC

(Signature of Consignor)

DESCRIPTION FOR FREIGHT RATING PURPOSES:

RAIL CAR TRIP LEASED
TO CONSIGNEE

SPECIAL INSTRUCTIONS

PO# 70703

Deliver On 01/29/2009 10 AM

LOAD 45,000 LBS.

SEND COA W/SHIPMENT.

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS
OFFERED/CORRECTLY
AFFIXED

EMERGENCY RESPONSE
INFORMATION ATTACHED

OSHA TAG(S)/LABEL(S) APPLIED
PINK HORIZ STRIPE OR PROD SPECIFIC TAG

Georgia-Pacific Chemicals LLC

Per

133 Peachtree St. N.E. Atlanta, Georgia 30303

POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN

HWY 82/PAPERMILL ROAD / P.O. BOX 520
CROSSETT, AR 71635
870-567-7200

APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier: Lees

Per

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

2

IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHO011000956

Environmental Services

TANK WASH WORK ORDER

Tank Cleaning Division
 Briggs Rd. • Houston, TX 77021
 Phone: (713) 676-1460 • Fax: (713) 676-1676

22623

PO #	Customer: <u>LEE'S</u>	Date: <u>2-3-09</u>
Tractor <u>2920</u>	Address: <u>E1000009A</u>	Time:
Trailer / Container Number <u>935</u>	Dropped By: <u>Willie Houston</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM-TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1				
2	<u>TALL OIL</u>			
3	<u>Fatty Acid</u>			
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>12</u> #2 <u>11</u> #3 <u>11</u> #4 <u>11</u> #5 <u>11</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature: <u>JR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry ✓		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge ✓		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

CES Environmental Services, Inc., Cleaning Division, makes no guarantees with respect to the thoroughness of the tank washing procedure or the total elimination of interior residues and/or moisture. Final inspection of the equipment remains the responsibility of the customer, and they hereby release CES Environmental Services, Inc., Cleaning Division, from any responsibility for claims arising from any allegations that the equipment was improperly cleaned, resulting in damage or loss.

CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

Cleaned By: JR Date: 2-3-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

Signature: _____

TW#26352

SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in
pen and retained by the Agent.

Shipper's No. 69186-1	Page 1 OF 1
Agent's No.	

RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading	Date 02/01/09
From: Georgia-Pacific Chemicals LLC (Shipper/Consigner) AT CROSSETT, AR	

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route, otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property over all or any portion of said route to destination agrees to perform every service required hereby in accordance with the applicable contract(s), if any, between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 2067-01 LAMBERTI USA, INC.	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL
SHIP TO ADDRESS: US 59 @ COUNTY RD 212		Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: HUNGERFORD, TX 77448 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges Advanced \$
CAR INITIALS AND NUMBER: 2526/1930	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	HOT Elevated temperature liquid, n.o.s.; 9; UN 3257; III XTOL 656 MIXED TALL OIL ACIDS PTBP-0656	GROSS 76560 TARE 31580 NET 44980 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.
DESCRIPTION FOR FREIGHT RATING PURPOSES:	RAIL CAR TRIP LEASED TO CONSIGNEE	Georgia-Pacific Chemicals LLC (Signature of Consignor)

SPECIAL INSTRUCTIONS

PO# 4500262744
Deliver On 02/02/2009 noon
Load 45,000 lbs. COA to accompany shipment.

Handwritten signature

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER
CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG, OR BAG
------------------------------------------------------	--------------------------------------------	---------------------------------------------------------------------

Georgia-Pacific Chemicals LLC Per <i>2-1-09</i> 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPERMILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
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APPROPRIATE PLACARDS CORRECTLY AFFIXED

EMERGENCY GUIDE BOOK LOCATED IN CAB

Carrier: <i>LEE'S</i>	Per <i>[Signature]</i>
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(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

2 IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300 DAY OR NIGHT

EPAHQ011000958

Environmental Services

Tractor / Tank Cleaning Division
4 Griggs Rd. • Houston, TX 77021
Phone: (713) 676-1460 • Fax: (713) 676-1676

TANK WASH WORK ORDER

26275

281-471-4973

PO #	Customer: <u>LEE'S</u>	Date: <u>2/9/09</u>
Tractor	Address:	Time:
Trailer / Container Number <u>2285</u>	Dropped By: <u>FRANK DAVIS</u>	Need By:

CONTAINER TYPE: ☐ TOTE BIN ☐ ROLL DOOR BOX ☐ ISO CONTAINER ☐ DRY BULK
☒ TANK TRAILER ☐ ROLL TARP BOX ☐ VACUUM BOX ☐ FRAC TANK ☐ POLY TANK ☐ VACUUM TRUCK

Compartment #	Last Contained	Heel - Hazardous	Heel - Non-Haz	Drum / Rolloff
1 <u>TAIL OIL</u>				
2				
3				
4				
5				

CLEANING CODES	WORK PERFORMED	TANK ENTRY PERMIT
1 Air Dry		Oxygen (19.5% -23.5%) #1 <u>0.0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
2 Quick Rinse		LEL (<10%) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
3 Cold Water Rinse		CO2 (<35 ppm) #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
4 Hot Water Rinse		Toxic Vapor #1 <u>0</u> #2 <u>0</u> #3 <u>0</u> #4 <u>0</u> #5 <u>0</u>
5 Steam Only (Per Hour)		Signature <u>AR</u>
6 Steam & Dry		Stripper Usage:
7 Rinse, Steam & Dry		Comments:
8 Detergent Wash, Rinse & Dry <input checked="" type="checkbox"/>		
9 Caustic Wash & Dry		
10 Caustic Wash, Rinse & Dry		
11 Waste Water Surcharge <input checked="" type="checkbox"/>		
12 Solvent Wash (Diesel # Hours)		
13 Solvent Wash (Stripper)		
14 Exterior Tractor Wash		
15 Exterior Trailer Wash (w/o Internal)		
16 Exterior Trailer Wash (with Internal)		
17 Exterior Acid Brite Wash		Authorized Additional Services:
18 Hand Labor (# Men / # Hours)		
19 Hydroblaster (# Hours)		
20 Solvent Wash (Green Stripper)		
21 Passivation		
Hose Cleaning		
Pump Cleaning		

Cleaned By: AR Date: 2-9-09

Inspected By: _____ Date: _____

Print Name: _____ Date: _____

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CES Environmental Services, Inc., Cleaning Division, is in no manner responsible for any damages or losses of equipment and/or materials left in their yard.

THIS SHIPPING ORDER must be legibly filled in, in ink, in indelible Pencil, or in Carbon and retained by the Agent.

Shipper's No. 69413-1	Page 1 OF 1
Agent's No.	

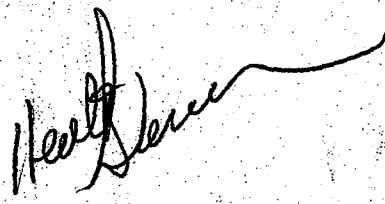
RECEIVED, subject to the classifications and lawfully filed tariffs in effect on the date of the receipt by the carrier of the property described in the Original Bill of Lading	Date 02/08/09
From: Georgia-Pacific Chemicals LLC (Shipper/Consignor) AT CROSSETT, AR	

The property described below has been received by Carrier in apparent good order, except as noted below, and is marked, consigned and destined as indicated below. Carrier agrees to carry the property to destination, if on its route; otherwise to deliver to another carrier on the route to said destination. Each carrier of, and any party at any time interested in, all or any of said property, over all or any portion of said route to destination, agrees to perform every service required hereby in accordance with the applicable contract(s), if any; between Georgia-Pacific and Carrier, and otherwise subject to the terms and conditions of the Uniform Domestic Straight Bill of Lading set forth (1) if this is a rail or rail-water shipment, in the Uniform Freight Classification, and (2) if this is a motor carrier shipment, in the National Motor Freight Classification.

To: 2067-01 LAMBERTI USA, INC.	(Consignee)	If charges are prepaid, write or stamp here, "Prepaid." PREPD & BILL
SHIP TO ADDRESS: US 59 @ COUNTY RD 212		Received \$ to apply in prepayment of the charges on the property described hereon
CITY, STATE, ZIP: HUNGERFORD, TX 77448 USA		Agent or Cashier
ROUTE:		Per (The signature here acknowledges only the amount prepaid)
DELIVERING CARRIER: LEE'S TRUCKING COMPANY	DESTINATION:	Charges Advanced \$
CAR INITIALS AND NUMBER: 2610/2285	SEAL NUMBER(S):	*If the shipment moves between two ports by a carrier by water, the law requires that the bill of lading shall state whether it is "carrier's or shipper's weight"

NO. AND TYPE OF PACKAGES	BASIC DESCRIPTION AND ASSOCIATED INFORMATION	WEIGHT* Subject to Correction
1 TT	HOT Elevated temperature liquid, n.o.s., 9; UN 3257, III XTOL 656 MIXED TALL OIL ACIDS PTBP-0656	GROSS 76640 TARE 32460 NET 44180 All transportation provided hereunder is subject to the terms of Section 7 of the respective bills of lading identified above as if Georgia-Pacific initialed the Section 7 provision on the face of that Bill of Lading with respect to each shipment described below.

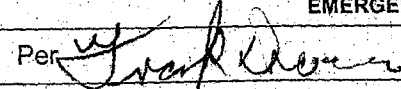
DESCRIPTION FOR FREIGHT RATING PURPOSES:	RAIL CAR TRIP LEASED TO CONSIGNEE	Georgia-Pacific Chemicals LLC (Signature of Consignor)
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SPECIAL INSTRUCTIONS	
PO# 4500262526 Deliver On 02/09/2009 noon Load 45,000 lbs. COA to accompany shipment. 	

THIS IS TO CERTIFY THAT THE ABOVE NAMED MATERIALS ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

APPROPRIATE PLACARDS OFFERED/CORRECTLY AFFIXED	EMERGENCY RESPONSE INFORMATION ATTACHED	OSHA TAG(S)/LABEL(S) APPLIED PRODUCT SPECIFIC LABEL, TAG OR BAG
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Georgia-Pacific Chemicals LLC Per Steve Webb 2-8-09 133 Peachtree St. N.E. Atlanta, Georgia 30303	POST OFFICE ADDRESS AND TELEPHONE NUMBER OF ORIGIN HWY 82/PAPER MILL ROAD / P.O. BOX 520 CROSSETT, AR 71635 870-567-7200
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APPROPRIATE PLACARDS CORRECTLY AFFIXED	EMERGENCY GUIDE BOOK LOCATED IN CAB
Carrier: LEE'S	Per 

(This Bill of Lading is to be signed by the shipper and agent of carrier issuing same.)

CH 7069-L (1/97)

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IN CASE OF EMERGENCY CALL CHEMTREC TOLL FREE (800) 424-9300

EPAHQ011000960